ARI Research Note 98-19

Factors Influencing the Enlistment Aspirations and Decisions of Hispanic, Black, and White Male Youth

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July 1998

U.S. Army Research Institute
for the Behavioral and Social Sciences

U.S. Army Research Institute
for the Behavioral and Social Sciences

A Directorate of the U.S. Total Army Personnel Command

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Research accomplished under contract
for the Department of the Army

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REPORT DOCUMENTATION PAGE

Form Approved
OMB No. 0704-0188

1. AGENCY USE ONLY *(Leave Blank)*	2. REPORT DATE	3. REPORT TYPE AND DATES COVERED
	July 1998	FINAL 9/87 - 8/88

4. TITLE AND SUBTITLE
Factors Influencing the Enlistment Aspirations and Decisions of Hispanic, Black, and White Male Youth

5. FUNDING NUMBERS
PE 0601102A
2O161102B74F
TA 222C
WU C76
Contract No. MDA903-87-C-0643

6. AUTHOR(S)
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Washington D.C. 20036

8. PERFORMING ORGANIZATION REPORT NUMBER

9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)
U. S. Army Research Institute
ATTN: PERI-BR
5001 Eisenhower Avenue
Alexandria, VA 22333-5600

10. SPONSORING/MONITORING AGENCY REPORT NUMBER
Research Note 98-19

11. SUPPLEMENTARY NOTES
COR: Dr. Michael Drillings

12a. DISTRIBUTION/AVAILABILITY STATEMENT
Approved for Public Release; Distribution is Unlimited.

12b. DISTRIBUTION CODE

13. ABSTRACT *(Maximum 200 words)*:
Hispanics are the country's fastest growing minority group and will represent an increasingly larger share of potential recruits. Using longitudinal data from a nationally representative sample of high school sophomores and seniors we examined how Hispanic, Black, and white male youths' enlistment plans and behavior are influenced by their family background, ethnic and cultural influences, mothers' expectations, academic achievement, family formation plans, and local labor market opportunities.

14. SUBJECT TERMS
enlistment enlistment intentions Hispanic structural equation models recruitment

15. NUMBER OF PAGES

16. PRICE CODE

17. SECURITY CLASSIFICATION OF REPORT	18. SECURITY CLASSIFICATION OF THIS PAGE	19. SECURITY CLASSIFICATION OF ABSTRACT	20. LIMITATION OF ABSTRACT
Unclassified	Unclassified	Unclassified	Unlimited

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FINAL REPORT

August 1988

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Contract No. MDA903-87-C0643

Prepared for:

U.S. Army Research Institute
for the Behavioral and Social Sciences

 The authors gratefully acknowledge the helpful comments of Carolyn Becraft, the computational assistance of Eunho Choe and David Naden, and the production assistance of Amy Klein.

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INTRODUCTION

Hispanics are the fastest growing minority group in the United States. Given current levels of high fertility and immigration, Hispanics will displace blacks as the country's largest minority population by the year 2020. Although there is a growing awareness of the demographic shifts, the significance of these trends for the military may not be as clear.

Demographic shifts in the Hispanic population have importance to the military for several reasons. As the general population of 18 to 24 year olds declines, Hispanics, like other minorities, will make up an increasingly larger share of the pool of potential recruits. In 1982, Hispanics accounted for 8 percent of the nation's 18 to 24 year olds. Over the next few decades they are expected to make up more than 15 percent of that age group. Currently, Hispanics enlist at rates lower than those of blacks, but above those of whites. If current rates of enlistment do not change, growth in the the share of Hispanic youth will mean an 8 percent decline in recruits in the next 30 years.[1] These forecasts leave little doubt that the long term future of the military will be importantly tied to its ability to recruit and retain Hispanic youth.

Growth in the Hispanic population will also change the socioeconomic composition of the armed forces. The future pool of potential recruits will be made up of fewer middle-income, suburban, majority youth from intact families and more lower socioeconomic, urban, minority youth from families headed by single mothers. Some of the likely effects of racial/ethnic change in the composition of the armed forces are increased emphasis on bilingualism, cultural diversity, and programs that provide support to military families.

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[1]This is based on the assumption that enlistment rates of Hispanic, black, and white youth as well as the number of 18 to 24 year olds remain constant and only reflect the predicted change in the share of the population of youth who are Hispanic, black, and white.

Finally, as the general population of 18 to 24 year olds declines and the proportion of Hispanic youth rises the military will face increased competition from business and postsecondary institutions for these youth. Therefore, it will be increasingly important for the military to understand the factors that influence Hispanic youth to enlist in the armed services.

This report examines the enlistment aspirations and decisions of Hispanic, black, and white male youth. Our objective is to determine the factors that influence Hispanics, blacks, and whites to enlist in the military at differential rates. More specifically, we concentrate on two broad questions:

1) What economic and sociological factors influence male youth to *plan to enlist* in the military after high school?; and

2) What factors influence the chances of Hispanic, black, and white male youth *actually enlisting* in the military following graduation?

The data used in this analysis are well suited to explore post high school aspirations and activities in conjunction with important prior individual, family, and community characteristics. We use data from the High School and Beyond Survey, a large, nationally representative panel of contemporary high school sophomores and seniors. We follow some 9,000 Hispanic, black, and white *male high school graduates* as they make the transition from high school into their adult roles. From these data we are able to obtain an understanding of the factors within the individuals themselves, their families, and their communities that predispose some youth to join the military and others to choose different alternatives upon completing high school.

Chapter 1 provides an overview of the social, demographic, and economic characteristics that distinguish Hispanics from blacks and whites, as well as those that distinguish Hispanic subgroups from one another. Projections of the future population of Hispanics are presented with an emphasis on their importance for the military.

Chapter 2 outlines the conceptual framework that guided our research. We discuss the ways that the choice of a particular path--the military versus postsecondary schooling or the civilian labor force--is shaped by family background characteristics, ethnic and cultural influences, economic opportunities, mothers' expectations, as well as individual characteristics, such as academic achievement.

The data and methods used in the analysis are discussed in Chapter 3. Chapter 4 first presents our bivariate results related to the factors that influence military intentions and enlistment behavior among Hispanic, black, and white male youth. The congruence between plans made while in high school to enter the military and actual post high school enlistment behavior is also discussed. Finally, the results of estimating structural equation models which correspond to the conceptual model are provided. Chapter 5 provides a summary and a discussion of the implications of our findings for the military.

Before turning to the remainder of this report, we highlight key findings from our analysis.

- Hispanic, black, and white male youth who *plan to enter the military* have relatively low family socioeconomic status.
- Among *actual enlistees*, Hispanics and whites tend to come from families with fewer economic resources than is true of black enlistees.
- The percentage of youth from female-headed households is higher among youth in the military than it is in the general population -- 27 versus 22 percent. This is especially true for white males in the military in comparison to whites in the civilian economy -- 23 versus 13 percent.
- In general, fewer than one-third of the youth who reported that they expected to be in the armed services or a service academy following high school were actually in the military two years after graduation. By contrast, nearly two-thirds of youth with expectations for postsecondary schooling or civilian jobs were in these activities two years later.

- Ethnic identification as measured by speaking Spanish at home, or with companions at school or in the community does not differentiate those who choose the military from those who choose other post high school alternatives. Nearly three-fourths of Hispanic enlistees reported speaking Spanish at home while in high school.

- The educational expectations of Hispanic, black, and white male youth who plan to enter the military are relatively high. Prospective enlistees are more likely than those who plan to work in the civilian labor force to express intentions to go to college some day.

- There is a strong economic dimension to the plans that high school youth formulate for their futures. Family income, desired wages, and characteristics of the local labor market have significant effects on *military aspirations.*

- *Enlistment* among Hispanic male high school graduates is predominantly influenced by their plans related to marriage and child-rearing. Among blacks, in contrast, economic variables are key. The enlistment of white male high school graduates is primarily influenced by their family income, plans related to postsecondary schooling, and their academic success in high school.

CHAPTER 1

PROFILE OF THE U.S. HISPANIC POPULATION

Composition of the Hispanic Population in the U.S. and in the Military

Individuals defined as Hispanic include a broad mixture of people with a variety of ethnic, racial, national, and cultural backgrounds. The U.S. Census Bureau disaggregates persons of Spanish heritage into five general categories: Mexican Americans or "Chicanos," Puerto Ricans, Cubans, Central and South Americans, and "Other Hispanics." Not only do Hispanics differ from the overall U.S. population, each of the Hispanic subgroups tend to be ethnically and economically diverse.

Mexican Americans or "Chicanos" are the dominant Hispanic subgroup in the U.S. and comprised 63 percent of the population of persons of Spanish origin in 1987 (see Table 1) and 46 percent of the Hispanics in the military. The majority of Mexican Americans are "Hispanos" who are not immigrants, but are native Americans who trace their ancestry back to the Spanish colonialists and Indians. They are concentrated heavily in the American southwest. Although they are the largest Hispanic subgroup in the armed forces, they are somewhat underrepresented given their large percentage in the population.[2] Since nearly one-fourth of all Mexican Americans families are classified as below the poverty level, the military may be a particularly attractive employment alternative for those who live in poor neighborhoods, where civilian employment opportunities are limited.

The second largest subgroup, Puerto Ricans, represent 12 percent of the total U.S. Hispanic population (U.S. Bureau of the Census, 1987). Puerto Ricans are disproportionately represented in the military, comprising 29 percent of Hispanics in

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[2]Breakdown of Hispanics in the military are from Quarterly Report, DMDC-3035H, March, 1988.

TABLE 1

Hispanic Population in the Military and in the U.S., by Subgroup and Service

	Military Service									
	Air Force		Army		Navy		Marines			
Hispanic Subgroup	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Total Percent	Total U.S. Population Percent
Mexican American	11,422	56.2	9,728	34.1	10,477	41.0	7,076	66.7	45.5	63
Puerto Rican	4,974	24.5	12,302	43.1	5,358	21.0	1,898	17.9	28.9	12
Latin American	0	0	1,270	4.5	751	2.9	279	2.6	2.7	11
Other	3,455	17.0	4,815	16.9	8,378	32.8	1,162	11.0	21.0	8
Cubans	457	2.3	410	1.4	580	2.3	193	1.8	1.9	5
Total	20,308	100.0	28,525	100.0	25,544	100.0	10,608	100.0	100.0	100

Source: Quarterly Report DMDC-3035H, March 1988, Bureau of the Census, "The Hispanic Population in the United States: March 1986 and 1987 (Advance Report), Series P-20, No. 417, August 1987.

Note: Table values include males and females. Percents may not sum to 100 due to rounding.

the armed forces. As shown in Table 1, the overrepresentation of Puerto Ricans is particularly striking in the Army in comparison to the other services. Although 12 percent of the Hispanics in the U.S. are Puerto Rican, they comprise 43 percent of the Hispanics in the Army. This compares to 25 percent for the Air Force, 21 percent for the Navy, and only 18 percent for the Marines. Part of the explanation for the large percentages of Puerto Ricans in the services is that they tend to be geographically concentrated in urban areas (e.g., New York, New Jersey, and Illinois) where the competition for jobs among those with low socioeconomic status may be more intense than is true of more rural, less densely populated areas. The military may be a favorable alternative for those who face limited opportunities or discrimination in the civilian labor force. Moreover, it may be easier for recruiters to target recruitment efforts on Hispanics in large metropolitan areas than it is for them to recruit rural Hispanics.

Ranked third in size among Hispanic subgroups are persons of Central and South American origin (11 percent). Recent Census Bureau data show that among the Hispanic subgroups the Central and South American population has experienced the highest rate of growth (40 percent) in recent years.[3] Much of this gain is related to immigration for economic and political reasons. Hispanics of Latin American origin currently make up only 3 percent of the Hispanic population in the armed forces, but because of their growing numbers, they represent an important recruitment target for military manpower policy makers.

Next in size are the "Other Hispanics" (8 percent). These individuals trace their origin to other Spanish-speaking countries, (e.g., Spain and the Caribbean) or identify themselves in one of the following general categories: Hispanic, Spanish, Spanish-

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[3]This refers to population change between 1982 and 1987. Source: Bureau of the Census, "The Hispanic Population in the United States: March 1986 and 1987 (Advance Report)", Series P-20, No. 416, August 1987.

American, Hispano, or Latino. This group experienced the second highest rate of growth (33 percent) between 1982 and 1987. "Other" Hispanics, like Puerto Ricans are disproportionately represented in the military -- 21 percent.

Cubans are the smallest of the Hispanic subgroups comprising just 5 percent of the total U.S. Hispanic population and 2 percent of Hispanics in the military. Since much of the immigration of Cubans to the U.S. was politically, rather than economically, induced Cubans are more likely than Hispanics in the other subgroups to come from well-educated, middle class backgrounds. Cubans have experienced the smallest growth among Hispanic subgroups in the U.S. in recent years.

In the following sections we will provide a description of the socioeconomic characteristics of Hispanics by subgroup and underscore the importance of these demographic realities for the military.

Since there are notable demographic differences among Hispanic subgroups, ideally they should be studied individually, rather than in the aggregate. Unfortunately, limitations in the size of our sample precluded us from analyzing the subgroups separately. This represents an important area where further research is needed. Appendix A provides breakdowns of the composition of Hispanics in our analytic sample.

Socioeconomic Characteristics of Hispanics

Age Composition

Hispanics are generally younger than the U.S. population as a whole, largely due to their relatively high fertility and heavy immigration. In 1987 the median age for the Hispanic population was 25.1, compared to 27.1 for blacks and 32.8 for whites. Mexican Americans are the youngest of the Hispanic ethnic groups with a median age of 23.5 years. Cubans, in contrast, are generally older than the overall U.S. population

with a median age of 35.8. Table 2 presents the median age of Hispanics in each of the ethnic subgroups.

Family Structure and Income

Families headed by females are more prevalent among the Hispanic population than among the general U.S. population (23 versus 16 percent). Close examination of whites, blacks, and Hispanics, however, shows striking differences among the three groups (see Table 2). As shown, 81 percent of non-Hispanic families in 1987 were married-couple families, compared to only 71 percent of Hispanic families. The comparable figure for blacks is 53 percent. Nearly one quarter of all Hispanic families consisted of a female householder with no husband present, while this was true of 42 percent of black families and only 13 percent of white families. Among Hispanic subgroups, the percentage of female-headed households is strikingly high among Puerto Ricans (43 percent), and is lowest among Cubans (18 percent).

Owing in part to the large proportion of female-headed families, Hispanics are generally much poorer than the overall population. The median family income in 1986 was about $20,000 for Hispanics, $17,000 for blacks and $31,000 for whites. Among Hispanic subgroups, Puerto Ricans had the lowest median family income ($14,584) while Cubans were the most economically well-off of the groups ($26,770). Twenty-five percent of Hispanic families have incomes below the poverty threshold. In contrast, 10 percent of non-Hispanic families are classified as poor. By race, the percentage of families below the poverty line is 28 percent for blacks and 9 percent for whites.

Education

Hispanics are generally less well-educated than the overall U.S. population. Despite the fact that they comprised 8 percent of the population of 18 to 24 year olds in 1985, only 4 percent of the total college enrollment in that year was made up of

TABLE 2

Selected Characteristics of All Persons and Persons of Hispanic Origin, by Type of Origin: March 1987

	Total Population	Hispanic Origin						Non Hispanic Origin		
		Total	Mexican	Puerto Rican	Cuban	Central and South American	Other Hispanic	Total	Black	White
Median Age (years)	31.9	25.1	23.5	24.3	35.8	27.3	30.9	32.6	27.1	32.8
Type of Family										
Married-couple families	79.9	70.8	74.8	53.0	77.6	66.8	72.0	80.6	52.7	82.8
Female householder, no husband present	16.2	23.4	19.2	43.3	17.7	25.5	22.8	15.7	42.0	13.0
Family Income in 1986										
Median income (dollars)	29,458	19,995	19,326	14,584	26,770	22,246	24,240	30,231	17,604	30,809
Below Poverty Level in 1986										
Families - percent below poverty level	10.9	24.7	24.9	38.1	13.3	18.7	19.4	9.9	28.0	8.6
Female, husband absent	34.6	51.2	48.6	66.5	N/A	42.4	47.7	32.8	50.1	28.2
Education										
Of persons 25 years and older, Percent completed:										
Less than 5 years of school	2.4	11.9	15.4	10.3	6.0	6.1	5.2	1.8	5.0	2.0
Four years of high school or more	75.6	50.9	44.8	53.8	61.6	59.3	64.2	77.3	63.4	77.0
Four or more years of college	19.9	8.6	5.8	8.0	17.1	12.2	14.2	20.6	10.7	20.5
Median school years completed	12.7	12.0	10.8	12.1	12.4	12.3	12.4	12.7	12.4	12.7

Note: N/A = Not available.

Sources: Figures for total population, persons of Hispanic origin, and total non-Hispanics are from the Bureau of the Census, Current Population Reports, Series P-20, No. 416, Tables 5 and 6. Figures for blacks and whites are from a combination of unpublished census data and the Bureau of the Census, Current Population Reports, Series P-60, No. 157, Money Income and Poverty Status of Families and Persons in the U.S. - Advance Report, March 1987.

Hispanic youth. While less than 2 percent of the non-Hispanic adult population completed less than five years of school in 1987, this was true of almost 12 percent of Hispanics. Three-fourths of non-Hispanic adults had completed four years of high school or more, compared with just 51 percent of Hispanic adults. The sharpest contrast is observed for college completion, however. In 1987 over 20 percent of non-Hispanic adults completed four or more years of college. For Hispanic adults, only 9 percent completed four or more years of college.

Projections of the Hispanic Population

Overall Forecasts

Hispanics are the fastest growing minority group in the U.S. Population projections are based on assumptions about fertility, mortality, and immigration. Table 3 provides forecasts of the Hispanic population under two different immigration scenarios. Under the first scenario of an annual net immigration of 500,000, Hispanics will comprise 9 percent of the U.S. population in the year 2000; a 39 percent increase over their percentage in 1980. Closer examination shows that the rate of increase will continue to build as we approach the year 2020. Further, by 2020, the *number* of Hispanics will have doubled from 1980. Under this same immigration scenario, Hispanics are projected to comprise 11 percent of the U.S. total in 2020; a 73 percent increase over the 1980 *percentage*. In contrast, over the same time frame blacks are projected to increase to 12 percent of the total population, a 22 percent increase.

Under the second scenario, an annual net immigration forecast of 1 million for Hispanics, the data indicate that Hispanics would displace blacks as the country's largest minority group.

TABLE 3

Population 1980 and as Projected for 2000 and 2020: Hispanics, Total U.S. Population, and Four Main Racial/Ethnic Groups

Racial/Ethnic Group	1980		2000		2020	
	Number (millions)	Percent of Total	Number (millions)	Percent of Total	Number (millions)	Percent of Total
			Annual Net Immigration = 500,000			
Total U.S. Population	226.5	100.0	267.4	100.1	291.5	100.0
White non-Hispanic	181.0	79.9	198.9	74.4	202.7	69.5
Black	26.5	11.7	35.2	13.1	41.7	14.3
Hispanic	14.6	6.4	23.8	8.9	32.4	11.1
Asian and other	4.4	2.0	9.5	3.6	14.7	5.0
			Annual Net Immigration = 1 million			
Total U.S. Population			279.1	100.0	316.9	100.0
White non-Hispanic			200.3	71.7	205.6	64.9
Black			36.4	13.0	44.4	14.0
Hispanic			30.3	10.8	46.6	14.7
Asian and other			12.1	4.3	20.4	6.4

Source: Leon F. Bouvier and Cary B. Davis, The Future Racial Composition of the United States (Washington, D.C.: Demographic Information Services Center of the Population Reference Bureau, 1982).

Age-Specific Projections

In addition to significant changes in the racial/ethnic mix of the population in the next 30 years, there will also be dramatic shifts in the age structure of the population. Consistent declines are expected in the proportion of individuals in the 18 to 24 age category for each racial/ethnic group (see Table 4). While a consistent decline in the percentage of the population 18 to 24 years old is predicted, Hispanics are expected to comprise an increasingly larger share of this segment of the U.S. population (see Table 5). In 1985, about 8 percent of individuals between the ages of 18 to 24 in the U.S. were Hispanic. By 1990, this figure is projected to rise to 9 percent; a 13 percent increase. By the year 2020, Hispanics are expected to comprise 15 percent of the country's 18 to 24 year olds; an 88 percent increase over the current figure.

An important concern for the military is how manpower supply will be shaped by the demographic composition of future cohorts of young people. As we have shown, an increasingly larger share of the future pool of potential recruits will be comprised of Hispanics. As the composition of the nations' young people in the 18 to 24 age range changes, the military will have to draw from a broader base to maintain current military manpower. Greater emphasis will have to be placed on enlisting minority youth, particularly Hispanics.[4]

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[4]Even if the draft is returned at some future date, the scenario is the same. The manpower pool is dwindling and the race/ethnic composition of the pool is notably changing.

TABLE 4

Percent of Population Between Ages 18-24, by Racial/Ethnic Group: 1982 to 2080

		Racial/Ethnic Group		
Year	Total	White	Black	Hispanic
1982	13.1	12.7	15.0	14.8
1985	12.0	11.6	14.2	13.6
1990	10.3	9.9	12.1	12.0
2000	9.2	8.6	10.6	11.0
2020	8.6	7.9	10.0	10.7

Source: U.S. Bureau of the Census, Current Population Reports, Series P-25, No. 995, Table U.

TABLE 5

Distribution of the Population Between Ages 18-24, by Racial/Ethnic Group: 1982 to 2080

	Racial/Ethnic Group		
Year	White	Black	Hispanic
1982	76.48	13.72	7.71
1985	75.17	14.40	8.17
1990	73.35	14.72	9.25
2000	69.92	15.34	11.24
2020	63.36	17.39	15.27

Source: U.S. Bureau of the Census, Current Population Reports, Series P-25, No. 995, Table T.

CHAPTER 2

CONCEPTUAL FRAMEWORK

The choice of entering the civilian labor force, enrolling in postsecondary school, or enlisting in the military[5] upon completion of high school is the culmination of a complex process that begins early in an individual's life. Youths' goals and expectations regarding post high school activities are shaped by family resources, ethnic and cultural influences, the expectations of significant others, their own academic success and aspirations, as well as the perceived and actual labor market opportunities that are available when it comes time for them to make decisions regarding training and occupational choices.

Crucial to the conceptualization of the process leading to the choice of occupational paths after high school is the idea that there are distinct social, economic, family, individual, and institutional factors that affect Hispanics and other racial/ethnic groups in their post high school plans and activities. Figure 1 illustrates the interrelationships we hypothesize among family background, local labor market characteristics, and choices of post high school activities, as well as four mechanisms that are hypothesized to intervene in this process: 1) schooling experiences, 2) family formation expectations, 3) wage expectations, and 4) plans for after high school.

Below we describe more specifically the ways in which each of these factors are hypothesized to influence actual choices of post high school activities.

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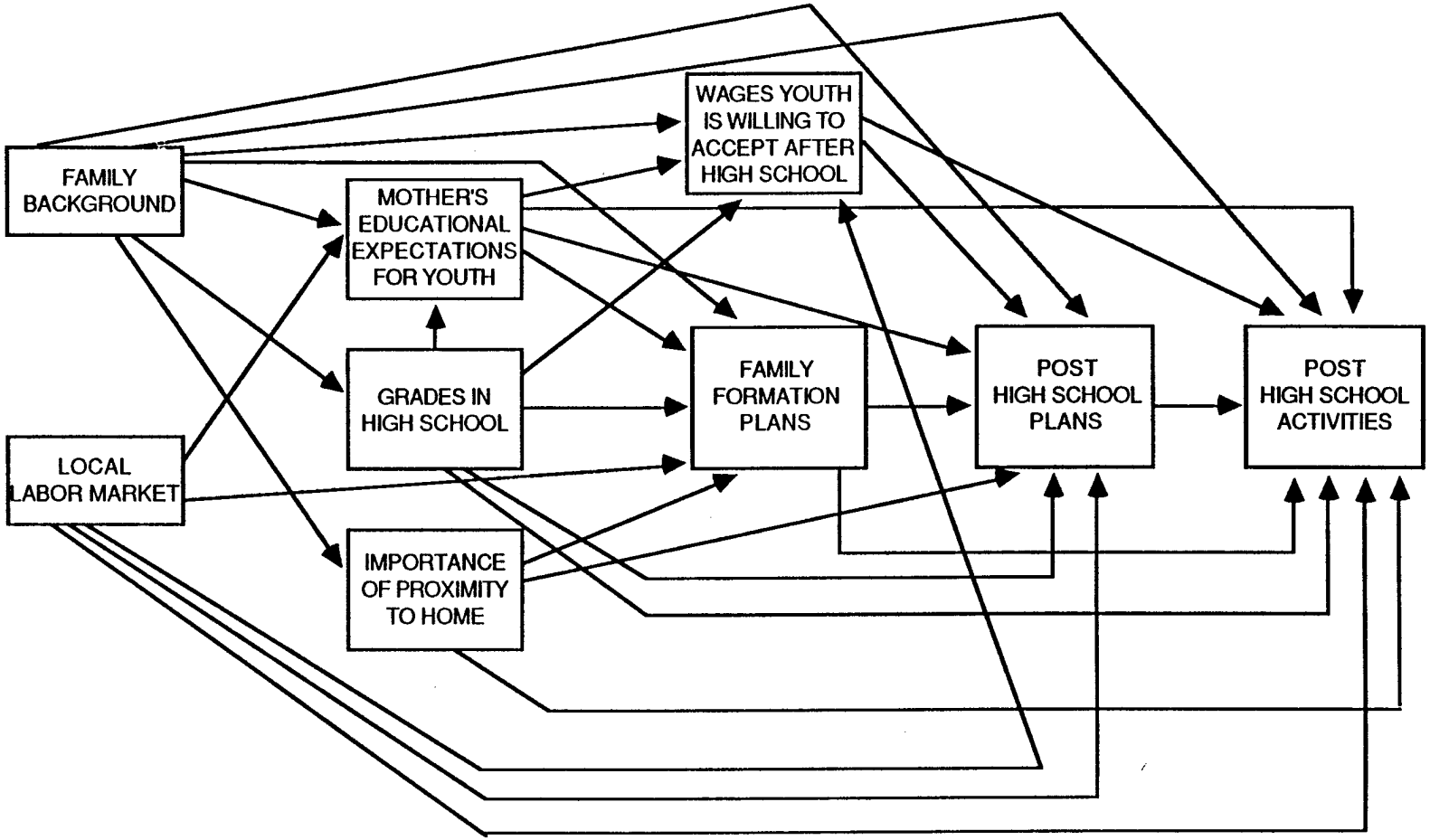
[5]Due to limitations of the High School and Beyond Data Set used for our analysis, we are not able to differentiate among the various branches of the armed services. In addition, in HS&B, youth are designated as "in the military" if they describe their primary activity during the survey week as "serving on active duty or in a service academy." We use the term *enlistee* to describe these youth since the vast majority in our sample are enlisted men.

FIGURE 1

Conceptual Model Used in Multivariate Analyses



Family Background Characteristics

Resources in the Home

Socioeconomic status (SES) has been shown consistently to be an important predictor of expected career choices (e.g., Blau and Duncan, 1967; Sewell and Hauser, 1975; Sewell, Hauser, and Featherman, 1976). Common measures of socioeconomic status include parents' income, occupational prestige, and educational attainment. Higher SES families place a greater value on achievement than do families with more limited resources, and SES is linked with the teaching of skills and values that are important for the attainment of goals. Moreover, the higher the level of SES the more likely the individual will posses knowledge of occupations, and knowledge of the requisite steps to attain educational and occupational goals (Bogie, 1976; Nolfi, 1979; Timperly and Gregory, 1974).

SES is also related to a number of intervening variables between family background and educational and occupational attainment. Moreover, SES has been shown to influence type of school attended, curriculum placement, coursework, and influences of significant others (Ballentine, 1983; Boocock, 1980; Levine, 1976).

Other factors that have been shown to affect post high school plans and actual choices, either directly or indirectly, are the number of siblings in the home (Blake, 1981; Myers and Ellman, 1983), whether a youth resides with one parent or both (Sewell, Hauser, and Wolf, 1980; Myers and Ellman, 1983), and mother's and father's occupational prestige (Marini, 1978).

Based on the positive relationship between family socioeconomic factors and educational aspirations and attainment, we expect that there will be a strong negative effect of family socioeconomic status on the propensity to plan or actually enlist in the military or to seek employment immediately after graduating from high school. Further, we expect to find that youth living in homes with limited resources because

of a large number of siblings or living with one parent will have fewer opportunities to continue in school after graduating from high school; therefore, they will be more likely to enlist in the military, to be active in the civilian labor force, or to be unemployed. However, because of the negative correlation between SES and racial/ethnicity, we anticipate that greater proportions of black and Hispanic youth will opt for the military. The military may be seen as an alternative training opportunity for those youth who have relatively high expectations for occupational attainment but who are financially precluded from college attendance.

Ethnic Identification and Community Ties

Youth who speak a language other than English generally have low educational performance (Myers and Milne, 1983; Rosenthal, Baker and Ginsburg, 1983) and low educational attainment (Veltman, 1977). Thus, we expect that these youth are more likely to seek employment or be unemployed after high school than youth who speak only English.

While language use may be related to achievement and overall educational performance, we also hypothesize that it is an indicator of ethnic identification. That is, Hispanic youth who consistently speak Spanish at home, school, and work will identify with the Hispanic community more than those who rarely use the language. We expect that those youth who have a strong attachment to the Hispanic community will be less likely to leave by enlisting in the military, since enlisting will take them away from an environment to which they have social and cultural ties.

We also anticipate that the stronger the emphasis a youth places on being in close proximity to his family and community the less likely he is to join the military, which would involve moving from home.

Local Labor Market Characteristics

Labor market characteristics, like family background characteristics, provide a context in which youth form plans and goals regarding schooling and employment. Evidence of the importance of the unemployment rate and other economic variables in formulating enlistment supply models have been shown in a number of studies (see, for example, Cooper, 1977; Huck and Allen, 1977; Fernandez, 1979; Kim, 1982). For example, as the 18 to 19 year old unemployment rate rises, rates of enlistment also increase (Cooper, 1977). It is interesting to note that certain analyses concentrating on Army enlistment, however, show that high unemployment rates lead to increases in white Army enlistment and to decreases in black Army enlistment (see, for example, Huck and Allen, 1977). Kim (1982) found that military enlistment by white males is particularly sensitive to labor market conditions. This raises some question about the possibility that recruiters may tend to focus their efforts on recruiting non-minority youth. As labor market conditions deteriorated, military service was favored over college and other civilian pursuits. It may be that in those areas where unemployment rates are high for white male youth, unemployment may be closely tied with the failure of certain industries, such as the steel industry. Recognizing that their skills are not readily transferable to other jobs, these youth may see the military as a means of obtaining on-the-job training in other skills. Further, declining economic conditions may be related to their own family's situation.

In addition, labor market conditions can be shown to have different effects on enlistment patterns among various racial/ethnic groups through the impact of relative military wages. Higher wages have a much stronger incentive effect on non-whites to enlist in the Army than on whites (Fernandez, 1979).

We anticipate that in local labor markets with favorable economic opportunities youth will be more likely to seek local civilian employment. Available evidence

indicates that the higher the local wage rate, the less likely it is that high school graduates will go to college, although the effect is small (Manski and Wise, 1983). In areas where unemployment is high and economic conditions are poor, however, we expect that youth will be more likely to enlist in the military. Given previous research evidence, we also expect that the link between unemployment rates and enlistment rates will vary among different racial/ethnic groups.

Intervening Factors

An individual's family background, ethnic/cultural heritage, and local labor market provide a context within which youth initially form the goals and expectations that affect their post high school choices. There are additional mechanisms that are hypothesized to intervene in this process such as educational performance, parents aspirations, family formation plans, and expected wages.

Educational Performance

Educational performance has been shown to play an important role in youths' decisions and plans (see, for example, Sewell and Hauser, 1975; Marini, 1978; Myers and Ellman, 1983). The academic success an individual achieves provides information that may reinforce the appropriateness of initial goals or may inspire new ones.

In general, we expect that youth with high achievement test scores and/or grades will be more likely to attend postsecondary institutions. However, given the screening process used by the military, a positive relationship is expected between academic performance and enlistment in the armed forces (Myers and Ellman, 1983).

Parents' Aspirations

Parents' aspirations for youth are important sources of influence in the occupational and educational plans and choices that youth make (Sewell and Hauser, 1975; Marini, 1978; Myers and Ellman, 1983). Brookover and Erikson (1975) found that

significant others influence the future plans of adolescents and provide them with the support and feedback necessary for making an accurate appraisal of personal goals and strengths. Parental aspirations (particularly the mother's) are thought to be a primary vehicle through which socioeconomic advantages are transmitted to subsequent generations (Haller and Portes, 1973).

Given this, we expect that there will be a positive relationship between mother's educational[6] and occupational expectations for youth and youths' aspirations and career choices.

Expectations for Family Formation

Youths' expected age for their first marriage and for the birth of their first child are viewed as important intervening mechanisms in youths' post high school plans and actual choices. Although the average age at which youth expect to marry differs only slightly across racial/ethnic groups (for whites and Hispanics it is about 24; for blacks it is 25), the age at which youth expect to form a family may serve as an indicator of the importance placed on community or traditional family values. One thing that these responses do seem to suggest among all three groups, however, is that males in high school consider marriage to be remote.

Youth who plan to marry or have a child early will take on responsibilities that are not necessarily compatible with the pursuit of additional schooling or enlistment in the military. Thus, we hypothesize that youth who expect to begin a family relatively early and place great importance on the family are less likely to attend school after graduating from high school.[7] They are, however, more likely to seek employment as a

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[6]Our measures of parental influence are limited to mothers because of the large percentage of female-headed households among Hispanics.

[7]Most of our speculation is based on research in which female youth are the unit of analysis and the actual age of childbearing or marriage is hypothesized to influence educational attainment (see, for example, Marini, 1984). Generalization to male youth,

first step in the process of family formation. Moreover, those youth who place a strong emphasis on forming a family early may find the frequent relocation associated with a military career incompatible with this goal.

Expected Wages

The expectations held by youth regarding the wages they hope to earn after high school are also important intervening factors in youths' choices of post high school activities. Youth who would be unwilling to accept minimum wage for example, would be expected to choose alternatives such as the military, a training program, or postsecondary schooling to enhance their earning potential. Moreover, we hypothesize that youth who expect to start a family relatively early would have different wage requirements than individuals planning to work while going to school.

Post High School Plans

As shown in Figure 1 we hypothesize that the plans that youth formulate in high school are an intervening mechanism that influence actual educational and occupational choices. Kuvlesky, Wright and Juarez (1971) found that among different racial/ethnic groups whites had the greatest amount of congruence between their goals or aspirations and their expectations for attaining them and that Hispanics were the least confident of attaining their goals, even though they placed a high value on attaining them.

With respect to aspirations for a military career, specifically, Wagenaar (1984) found that those selecting the military were most likely to be male and to have low educational aspirations.

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must be undertaken with caution. Men do not take on the same responsibilities as women, and thus, childbearing and marriage may not create the same barriers to further education for men as for women.

We anticipate that the occupational plans an individual makes while in high school will positively predict actual post high school choices. We anticipate that the link between plans and actual behavior will be strongest for those who plan to enroll in postsecondary schooling or to enlist since these alternatives require more advance preparation, such as filing applications, and taking qualifying tests such as SAT's and the ASVAB.

Research Questions

Having outlined our conceptual framework above, we pose the following research questions:

- How do family background characteristics influence military intentions and enlistment of male youth?
- Among Hispanics, how does the level of ethnic identification of youth influence military plans and enlistment?
- How do characteristics of the local labor market influence post high school plans and activities of Hispanic, black, and white male youth?
- What is the influence of academic achievement on Hispanic, black, and white youths' post high school plans and activities?
- How do the expectations of parents and peers influence youths' military intentions and enlistment, and are there racial/ethnic differences?
- How do youths' expectations regarding the timing of marriage and their first child influence their propensity to enlist or to plan to enlist? Does this differ by racial/ethnic group?
- How do expectations regarding the amount of acceptable wages influence the propensity to enlist or plan to enlist, and are there racial/ethnic differences?
- To what extent is there congruence between Hispanic, black, and white youths' military intentions in high school and their actual enlistment after graduation?

CHAPTER 3

DATA AND MEASUREMENT

The High School and Beyond Study (HS&B) is a large-scale, nationally representative survey of high school students begun in 1980. High school sophomores and seniors were selected through a two-stage probability sample with schools as the first stage unit and students as the second stage unit. The base-year survey consisted of young men and women from 1,015 schools. Students were initially interviewed in the spring of 1980, with follow-up surveys in 1982, 1984, and 1986.

The base-year sample of high school sophomores consists of 30,030 students in 1980, while the base-year senior cohort consists of 28,240 students. Subsamples of students from each cohort were re-interviewed for each of the follow-up surveys.

The longitudinal nature of the HS&B data is well suited to our analysis. We are able to track high school students as they make the transition from high school into their adult roles, while controlling for important prior individual, family, and community characteristics. Moreover, having survey information available from high school and up to six years beyond we are able to explore how closely plans made while in high school match actual activities engaged in after graduation.

The analytic sample is restricted to young men whose racial/ethnic identification is white, black, or Hispanic and who completed high school.[8] The sample used for this

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[8]As discussed earlier, the national drop out rate for Hispanics is the highest among the country's race/ethnic groups. Since the HS&B survey is nationally representative of high school *students*, and not of high school *graduates*, we introduce some selectivity bias into our sample by restricting it to high school graduates. The restriction to high school graduates was made to create a sample of youth with relatively comparable education. Currently Congress mandates that 65 percent of enlistees be high school graduates.

analysis consists of a pooled sample of over 9,000 young men who were sophomores or seniors in 1980.[9]

Certain types of information (such as academic achievement, educational expectations and mothers' education) were elicited in several waves of the HS&B survey. Unless otherwise stated, all explanatory variables used in the analyses were measured during the respondents' senior year of high school. For the senior cohort that means the majority of variables were measured in 1980, while for the sophomore cohort the same variables were measured in 1982. An inflation correction factor was applied to economic variables such as family income, and lowest acceptable wages to make measures from the two cohorts compatible in the pooled sample.

Table 6 provides a description of the measurement of variables used in our analysis as well as univariate sample statistics.

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[9]Seniors must have completed high school by June 30, 1982, sophomores must have completed high school by June 30, 1984.

TABLE 6

Description of Variables Used in Analyses

Concept	Variable Construction	Mean	Standard Deviation
Family Background Characteristics			
Single Parent Status	Whether youth was residing in a family with only a mother present. (Two parents = 0, Single parent = 1)	0.23	0.42
Mother's Education	Mother's years of schooling. (Range 9 to 16)	12.54	1.88
Mother's Occupational Status	Whether mother's occupational status is professional/managerial. (Not professional = 0, Professional = 1)	0.13	0.34
Family Income	Yearly income of family in dollars. For sophomore cohort, inflation factors was applied. (Range $2024 to $47,009)	$22,272	12,226
Number of Siblings	Number of children in the home minus 1. (Range is 0 to 25)	3.06	2.15
Community Ties			
Importance of Proximity to Home	Whether youth considers it important to be close to home. (No = 0, Yes = 1)	0.72	0.45

(continued)

Table 6 (continued)

Concept	Variable Construction	Mean	Standard Deviation
Wage Expectations			
Wages	Lowest hourly wage that youth would be willing to accept for a job after high school graduation. An inflation factor was applied to the responses of the senior cohort in 1980 to make them compatible with those of the sophomore cohort in 1982. (Range $1.50 to $4.27)	$3.30	0.59
Expected Timing of Family Formation			
Marriage	Age youth expects to marry. (Range 15 to 31 years)	24.66	3.30
Children	Age youth expects to have first child. (Range 15 to 31 years)	25.96	3.30
Educational Performance			
Grades	Grades attained so far in high school. (Range 0 to 4)	2.77	0.71
Reading Achievement	Reading standardized achievement score. (Range 26 to 72)	51.98	10.21
Math Achievement	Math standardized achievement score. (Range 28 to 73)	52.60	10.02
Mothers' Aspirations for Youth			
Years of Schooling	Years of schooling mother wants youth to complete. (Range 10 to 16)	15.00	1.42

(continued)

Table 6 (continued)

Concept	Variable Construction	Mean	Standard Deviation
Mothers' Aspirations for Youth (cont'd)			
College	Mother wants youth to attend college. (No = 0, Yes = 1)	0.66	0.48
Vocational Training	Mother wants youth to receive vocational training. (No = 0, Yes = 1)	0.07	0.25
Work	Mother wants youth to join the labor force. (No = 0, Yes = 1)	0.09	0.29
Military	Mother wants youth to enlist in the military. (No = 0, Yes = 1)	0.07	0.25
Post High School Plans	The activity that youth anticipated would take the largest share of their time in the year after leaving high school.		
School	Taking vocational or technical courses in a trade or business school full-time or part-time, taking academic courses at a junior or community college full-time or part-time, taking vocational or technical subjects at a junior or community college full-time or part-time or attending a four-year college or university full-time or part-time. (No = 0, Yes = 1)	.55	.50
Civilian Labor Force	Working full-time, but not attending school or college or entering an apprenticeship or an on-the-job training program. (No = 0, Yes = 1)	.30	.46

(continued)

Table 6 (continued)

Concept	Variable Construction	Mean	Standard Deviation
Post High School Plans (cont'd)			
Military	Going into the regular military service (or service academy). (No = 0, Yes = 1)	.05	.22
Other	Being a full-time homemaker, or other (travel, taking a break, no plans). (No = 0, Yes = 1)	.03	.16
Post High School Activities	The primary activity youth were engaged in during the survey week. Activities were measured two, four, and six years after youth completed high school.[a/]		
School	Taking vocational or technical courses at any kind of school; taking academic courses at a two- or four-year college; taking courses at a graduate or professional school; serving in an apprenticeship program or government training program. (No = 0, Yes = 1)	.51	.50
Civilian Labor Force	Working for pay full-time or part-time. (No = 0, Yes = 1)	.34	.47
Military	Serving on active duty in the Armed Forces (or service academy). (No = 0, Yes = 1)	.05	.23
Unemployed	Holding a job, but on temporary lay-off from work or waiting to report to work; looking for work. (No = 0, Yes = 1)	.06	.24

a/ Means shown are for post high school activities two years after high school.

(continued)

Table 6 (continued)

Concept	Variable Construction	Mean	Standard Deviation
Post High School Activities (cont'd)			
Other	Keeping house (without other job); taking a break from work or school; or other activity. (No = 0, Yes = 1)	.03	.16

CHAPTER 4

RESULTS

In this chapter we present data that address the questions posed in Chapter 2. More specifically, results from statistical analyses that examine the relationships between variables such as family background and labor market characteristics and military plans and enlistment will be presented. Before discussing the relationships between key variables we first describe the prevalence of particular plans and post high school activities for the three racial/ethnic groups studied here.

Our data reveal that minority males are over-represented in the military.[10] More specifically, while Hispanics represent 12 percent of our population of young males, they account for 14 percent of military enlistees (see Figure 2). Similarly, blacks comprise 12 percent of the youth population and 14 percent of those in the military. Whites, in contrast, are under-represented in the military, comprising 78 percent of the youth population and only 72 percent of the enlistees.

The picture that emerges when national level defense manpower center and Census Bureau data are used is somewhat different. Table 7 provides the distribution of the active duty armed forces by service and racial/ethnic group using national level data as of March 1988.[11] These data reveal that 4 percent of the armed forces are of Spanish origin. Among the services, the Marines have the largest percentage of Hispanics (5.4 percent). Census Bureau estimates for 1987 put the percentage of Hispanics in the population at 7.9 percent. Thus, in contrast to our findings, at the national level Hispanics are under-represented in the military.

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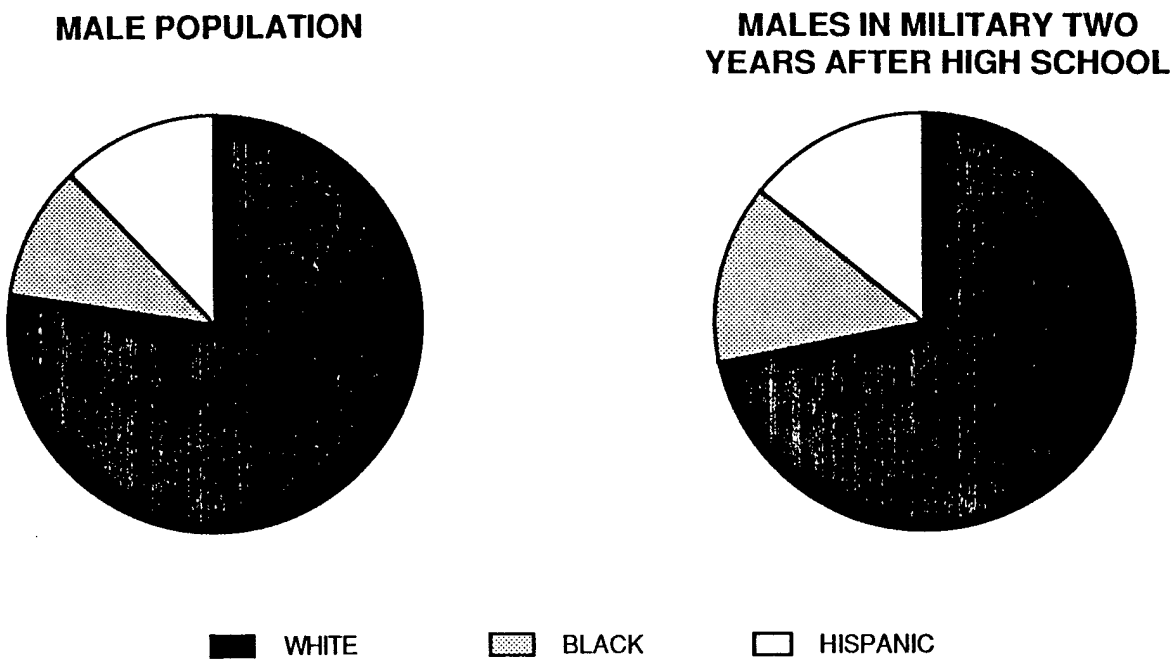
[10]Although these figures vary considerably by military service at the national level, HS&B data limitations prevent us from differentiating among the services.

[11]Data are from quarterly report DMDC-3035 and include males and females.

FIGURE 2

Racial/Ethnic Composition Of The Male Population And Males In The Military Two Years After High School



NOTE: Based on the sample of white, black, and Hispanic male high school sophomores and seniors in 1980.

TABLE 7

Distribution of Active Duty Forces by Service and Racial/Ethnic Group

	Military Service								
	Air Force		Army		Navy		Marines		
Racial/Ethnic Group	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Total Percent
Minority	128,981	21.8	267,607	35.0	135,768	23.6	54,598	27.7	27.6
Black	89,616	15.2	209,182	27.4	79,765	13.8	37,833	19.2	19.6
Spanish	20,308	3.4	28,525	3.7	25,544	4.4	10,608	5.4	4.0
Other/Unknown	19,057	3.2	29,900	3.9	30,459	5.3	6,157	3.1	4.0
Majority	461,337	78.2	496,495	65.0	440,718	76.4	142,598	72.3	72.4
Total	590,318	100.0	764,102	100.0	576,486	100.0	197,196	100.0	100.0

Source: Quarterly Report DMDC-3035, March 1988.

Note: Table values include males and females.

The explanation for this discrepancy in findings lies in differences in the groupsdifferences in the groups being compared. Our sample is restricted to males high school graduates who are first time enlistees. The DMDC figures include both males and females, enlistees as well as re-enlistees, and both high school graduates and those without diplomas or GED's.

Since the over-representation of minorities in the military is the result of higher minority enlistment and retention rates, we would expect to see greater percentages of minority high school graduates expressing aspirations for a military career than we would expect for whites. In fact, our data reveal that 11 percent of black males reported in their senior year that they expected to be in the military in the year following high school. This compares to 7 percent of Hispanics and only 4 percent of whites (see Figure 3).

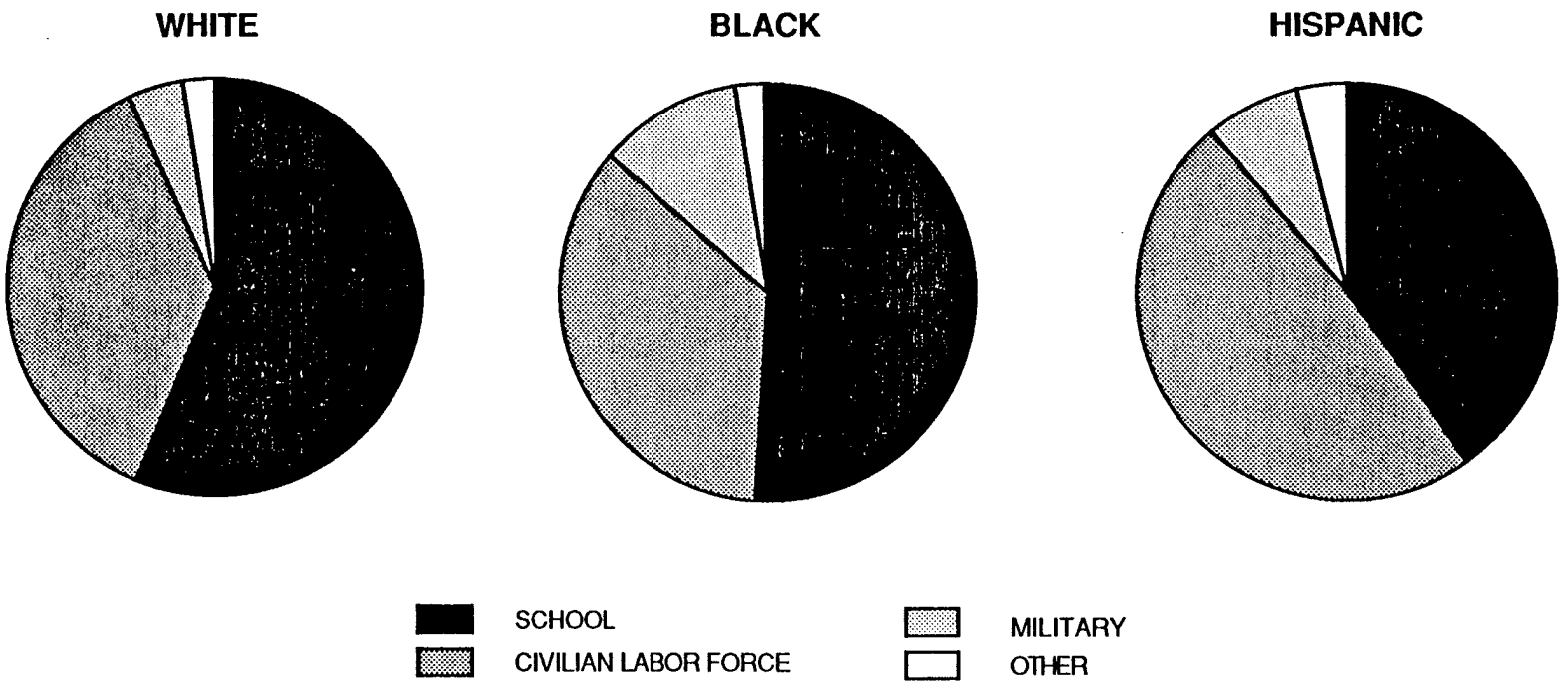
Of those high school graduates not anticipating military service, the majority of black and white males reported plans to enroll in postsecondary schooling. About one-third of the remaining youth anticipated that they would take jobs in the civilian labor force. Less than 3 percent reported "other" plans, such as travel or taking a break from school and work.

The pattern of post high school plans is somewhat different for Hispanics (see Figure 3). Nearly half of the Hispanic youth reported that they expected to be working in the year following graduation, while only 40 percent anticipated enrolling in postsecondary schooling. Four percent of Hispanics reported "other" plans.

The plans that youth formulate in high school closely parallel the patterns of actual activities they are engaged in shortly after graduation, with a few exceptions (see Figure 4). The percentages of Hispanics (7 percent) and whites (4 percent) with intentions to enlist in the military are about the same as the percentages of actual enlistees two years later--5 and 4 percent, respectively (see Figure 4). Among blacks,

FIGURE 3

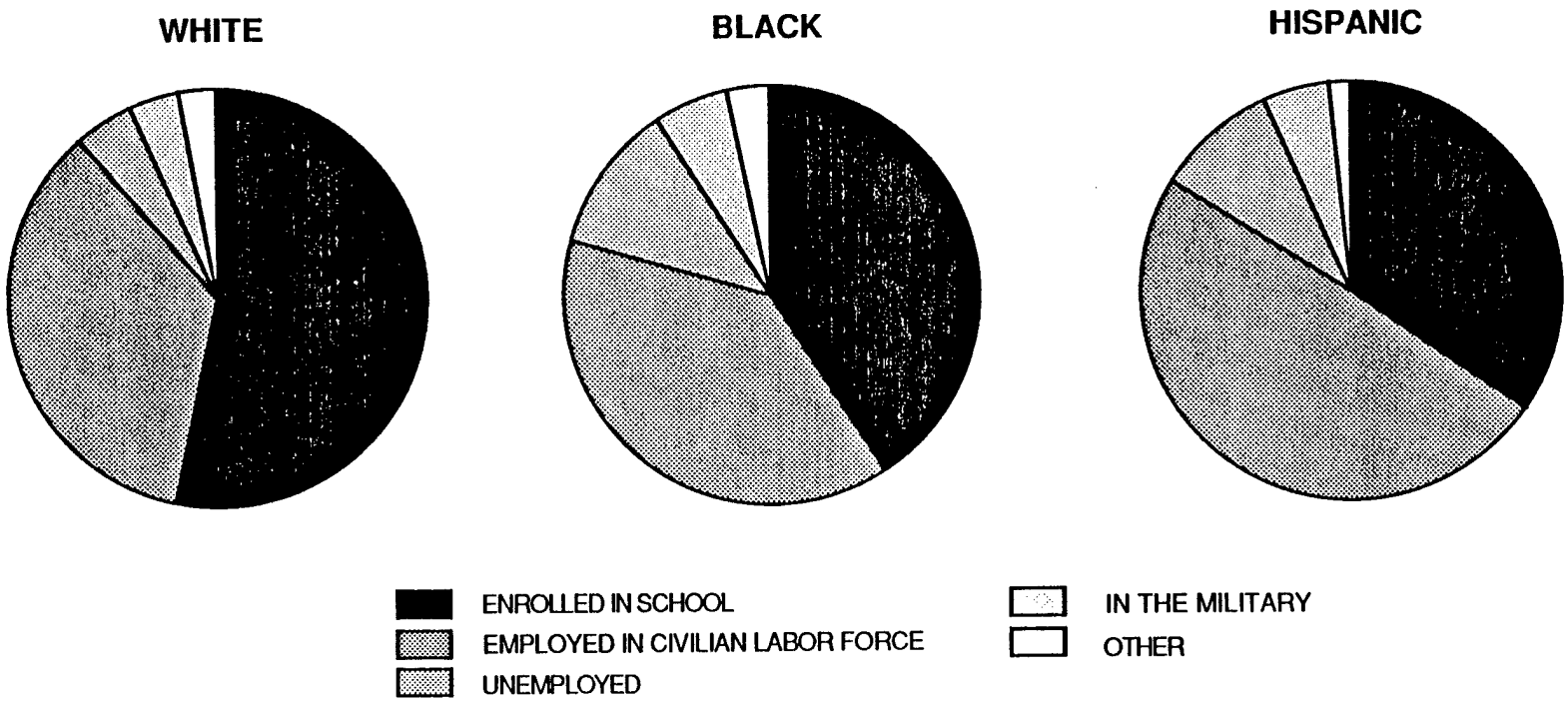
Post High School Plans



NOTE: Based on the sample of white, black, and Hispanic male high school sophomores and seniors in 1980.

FIGURE 4

Activity Two Years After High School



NOTE: Based on the sample of white, black and Hispanic male high school sophomores and seniors in 1980.

in contrast, actual enlistees (6 percent) fall short of the percentage that had expressed aspirations in high school to enter the military after graduation (11 percent). Similarly, among all racial/ethnic groups the percentage of youth who anticipated that they would be in school is slightly larger than the percentage actually enrolled in school two years after high school. Some of this may be attributable to the fact that they may have already completed schooling or a training program by the time of the first observation.

Enlistment rates increase to 8 percent for both Hispanics and blacks when measured four years after high school and decrease after six years[12] to levels just above those observed shortly after high school graduation. The rate of military enlistment among whites remains stable over the entire observation period.

Bivariate Results

The Relationship Between Plans and Activities

Table 8 presents the results of cross-classifying responses high school seniors gave for what they thought they would be doing in the year following graduation with the actual activities they were engaged in two years after high school. These data reveal that the link between intentions and actual activities is weakest among those who expected to be in the military in the subsequent year. Only one-third of the white youth who planned to enlist were actually in the military two years later. Among blacks and Hispanics, the comparable figures are even lower, 27 and 21 percent, respectively.

Although obviously not all youth who have military aspirations would meet mental and physical requirements for the armed services, an important question for recruitment purposes is why did two-thirds or more of those who expressed intentions to enter the

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[12]Measures of post high school activities are limited to seniors only six years after high school.

TABLE 8

Cross-Classification of Post High School Plans and Actual Activities Two, Years After High School by Racial/Ethnic Group

Post High School Activities	Post High School Plans								
	Enlist in Military			Attend School			Work in Civilian Labor Force		
	White	Black	Hispanic	White	Black	Hispanic	White	Black	Hispanic
Two years after high school									
Military	33.6	27.1	21.2	2.1	0.8	4.4	3.6	6.0	4.0
School	21.4	11.6	11.5	76.2	62.6	61.9	23.5	15.1	23.4
Civilian labor force	39.4	89.9	53.7	17.6	30.7	21.9	61.3	65.7	56.8
Unemployed	4.4	20.1	13.6	1.9	5.0	7.4	8.4	11.4	11.6

Note: Table values based on weighted data.

Table reads: Among white male youth who planned to enlist in the military after high school graduation, 34 percent were actually in the military two years later.

military never follow through? One possible explanation is that high school youthmaking plans for their futures require information to aid in their decision making. If youth who are already favorably predisposed toward the military are provided with concrete information on benefits and career opportunities they may be encouraged to take steps to enlist. Another possibility is that high school counselors may not provide reinforcement to students who express an interest in a career with the armed services. If this is the case, it might be advantageous for the recruiting command to target programs and resources specifically to high school counselors in order to enhance their awareness of the opportunities that military service presents.

The plans of students who intend to enroll in a postsecondary school or training program, in contrast, more closely match their actual activity two years after high school. Of Hispanics, blacks, and whites who planned to obtain further schooling after high school, more than 60 percent were actually in school two years after graduation. This close congruence between plans and behavior may be observed for schooling because in the majority of cases students would have already submitted applications (if not already been admitted) to postsecondary institutions at the time (February of their senior year) they were asked to report their plans.

There is also a similarly large amount of congruity between plans and behavior among youth with plans to work in the civilian labor force.

Family Background Characteristics

Our next objective was to identify the family background characteristics that distinguish enlistees and those with military aspirations from other male youth. Our results reinforce the central importance of family resources in differentiating youth with different aspirations for their futures (Table 9). Young men who plan to enter the military in the year following high school are distinguished from those with other aspirations on a number of measures of family resources, across all three racial/ethnic

TABLE 9

Means on Individual, Family and Local Labor Market Characteristics by
Post High School Plans and Racial/Ethnic Group

	Post High School Plans								
	Enter the Military			Attend School			Work in Civilian Labor Force		
	White	Black	Hispanic	White	Black	Hispanic	White	Black	Hispanic
Family Background									
Family income (dollars)	20,320	13,786	17,077	26,612	18,307	22,162	22,583	15,391	18,948
Number of siblings	3.12	4.22	3.85	2.55	3.46	3.04	3.02	3.76	3.45
Single parent household	.27	.45	.23	.17	.43	.19	.17	.49	.25
Mother's years of schooling	12.15	11.91	11.81	13.19	12.59	12.21	12.22	12.30	11.73
Mother's occupation professional/managerial	.08	.14	.05						
	.16	.17	.13	.11	.12	.07			
Importance of Living Close to Home	1.92	1.88	1.86	1.85	1.86	1.98	1.88	1.92	1.94
Labor Market Characteristics									
County percent employment growth 1980-81	.86	.77	2.01	.96	.52	1.67	.79	.59	1.89
County unemployment rate 1980	10.59	9.53	9.90	9.61	9.88	9.74	10.60	10.15	9.93

Table 9 (continued)

	Post High School Plans								
	Enter the Military			Attend School			Work in Civilian Labor Force		
	White	Black	Hispanic	White	Black	Hispanic	White	Black	Hispanic
Schooling Experiences									
High school GPA	2.62	2.58	2.45	3.08	2.65	2.78	2.50	2.44	2.34
Reading achievement	51.53	45.02	47.46	56.87	48.78	50.22	49.16	43.58	44.36
Math achievement	51.81	44.70	47.21	58.62	49.09	51.46	50.23	43.08	45.75
Mother's educational expectations for youth (years)	14.36	14.76	14.49	15.51	15.39	15.33	14.09	14.67	13.81
Family Formation Expectations									
Age expect to marry	24.11	25.21	24.53	24.61	25.97	24.66	23.69	25.78	23.87
Age expect to have first child	25.61	24.61	25.55	26.51	26.10	26.25	25.63	25.22	25.24

groups. Prospective enlistees have lower average family incomes than young men who plan to attend school or take a civilian job after high school. Those who plan to enlist also come from relatively larger families than those with other plans. The educational attainment and occupational prestige of the mothers of these young men are also generally lower in comparison to youth who plan to continue their schooling beyond high school or work in the civilian labor force after graduation.

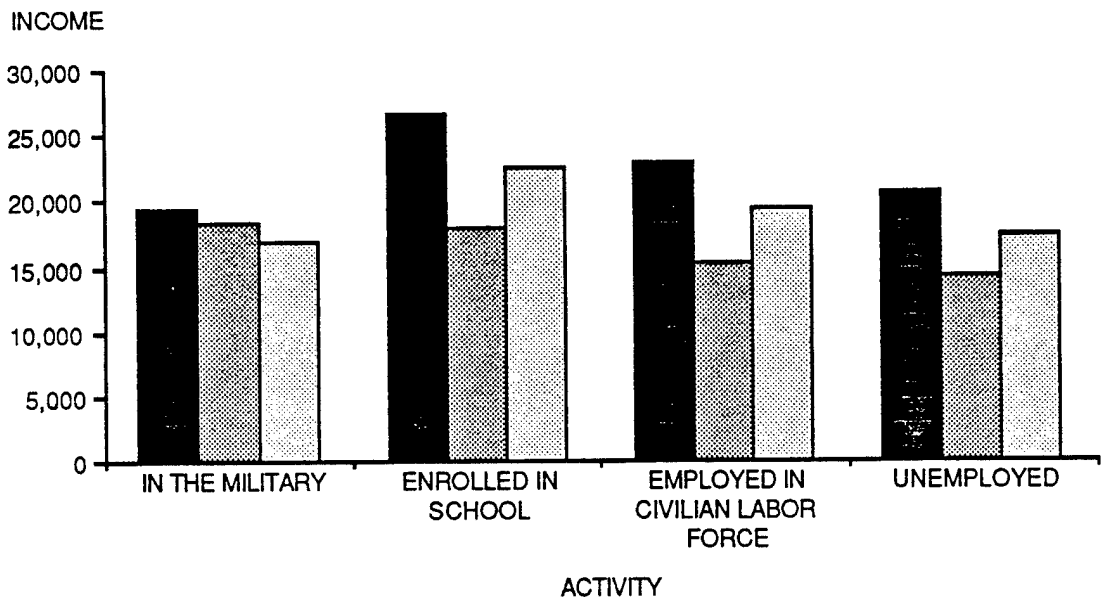
As is true for youth who intend to enlist in the military, youth who actually enlist upon completion of high school are distinguished from those who made other choices on a number of measures of family SES (see Figure 5). When Hispanics, blacks, and whites are combined, the percentage of enlistees from female-headed families (27 percent) is greater than the comparable figures for those enrolled in school (19 percent) and working in a civilian job (22 percent).

When we examine the data separately by racial/ethnic group, it becomes apparent that Hispanic and white high school graduates who enter the military tend to come from families with lower socioeconomic status than is true of black enlistees. However there are some noteworthy differences between whites and Hispanics. As a group, Hispanic enlistees tend to have large families, with relatively low incomes, and their mothers have generally completed relatively low levels of schooling. Almost one-quarter of Hispanic enlistees come from families where the mother is the sole provider of economic support. This is similar to the percentage of female-headed families among Hispanics in the civilian work force (see Table 6). The pattern is somewhat different for whites.

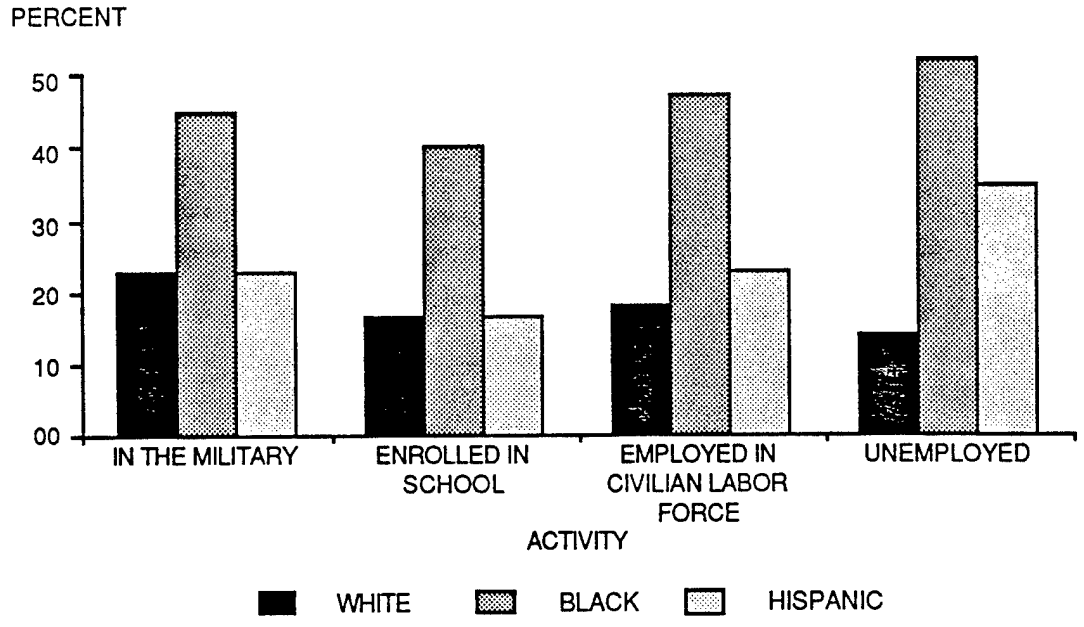
Although they too tend to be from low income families, white enlistees generally have fewer siblings than their counterparts who are in school or working, and their mothers have relatively high levels of educational attainment compared to youth who are in the civilian labor force. There are also relatively high rates of female-headed

FIGURE 5

Family Income By Activity Two Years After High School And Race/Ethnicity



Percent Of Youth In Single Parent Households By Activity Two Years After High School And Race/Ethnicity



families observed among white youth in the military. Twenty-three percent of white high school graduates in the military two years after high school come from a female-headed family. This is almost twice what the Census Bureau estimates to be the percentage of single parent families (13 percent) in the overall white population.

Black high school graduates who are in the military two years after high school tend to have more economically advantaged families than is true of Hispanic and white enlistees. Black enlistees generally come from relatively small families with average family incomes that are relatively higher than those of black males in the other categories. Nearly half of black enlistees (46 percent) come from families where the mother is the only source of economic support, which is comparable to the percentages of blacks in the civilian labor force.

The high incidence of female-headed families among enlistees is noteworthy. The importance of the family structure of enlistees is a topic that deserves further research attention. Youth from disrupted families may lack male role-modeling. This, coupled with the added pressures of military life, such as frequent relocation, may lead to dysfunction among the families of enlistees. If this is the case, it would underscore the importance of social services for military families.

Ethnic Identification and Community Ties

Next, we consider how the level of ethnic identification manifested by Hispanic youth differs between those who enlist in the military, or plan to enlist and those engaged in other activities. We measure ethnic identification and community ties by examining the use of Spanish in various settings and by considering whether youth place importance on being close to home.

Speaking Spanish at home does not appear to distinguish military enlistees from those in the other categories (see Table 10). Hispanic youth who are in the military

TABLE 10

Use of Spanish Among Hispanic Males, by Activity
Two Years After High School

Use of Spanish	Post High School Activity			
	In the Military	Enrolled in School	Employed in Civilian Labor Force	Unemployed
Speaks Spanish:				
With Mother	.75	.74	.82	.71
With Best Friends	.70	.55	.67	.60
With Other Students	.74	.55	.64	.55
In Stores	.42	.34	.50	.48
At Work	.54	.42	.58	.46

N = 1998 (sample of Hispanic seniors and sophomores). Tables values based on weighted data.

Source: High School and Beyond Survey, Center for Education Statistics, U.S. Department of Education.

are about equally as likely to speak Spanish with their mothers as those engaged in any other activity, except holding a civilian job.

Differences across the activity categories do emerge, however, in the likelihood of speaking Spanish with one's best friends or schoolmates, in stores, and in the work place while still in high school. Hispanic youth who are enrolled in postsecondary schools are the least likely of youth in any of the other activities to report that they spoke Spanish with their companions at home, at school, or in the community. As noted earlier, the educational attainment of Hispanics overall is relatively low in comparison to the general population so it may be those with the weakest ethnic ties who make the atypical decision to pursue postsecondary education. Further, this result may be the product of a negative correlation between language use and socioeconomic status.

Focusing more closely on the language use of Hispanic high school graduates who enter the military, we note that nearly three-fourths of Hispanic enlistees two years after high school reported that they speak Spanish with their mothers, and nearly that amount said they spoke Spanish with other students and their best friends.

Next, we turn to an examination of whether there are differences in the importance placed on being close to home by youth in different plans and activity categories. Given the mobility associated with a military career, it is not surprising that Hispanics who plan to enter the military place the least emphasis on being close to home in comparison to Hispanics in the other categories. Those who place the greatest importance on proximity to home plan to attend school after graduation from high school. Among blacks and whites, the pattern is different. Those with plans to enter school place the least importance on living close to home. It may be that these youth expect to attend schools away from home. An unexpected finding is that among

whites the greatest emphasis on proximity to home is observed for those with aspirations for the military.

When we look at the importance placed on being close to home across actual activities a distinctive pattern emerges. The level of importance placed on proximity to home is lowest among those in the military two years after high school.

Local Labor Market Characteristics

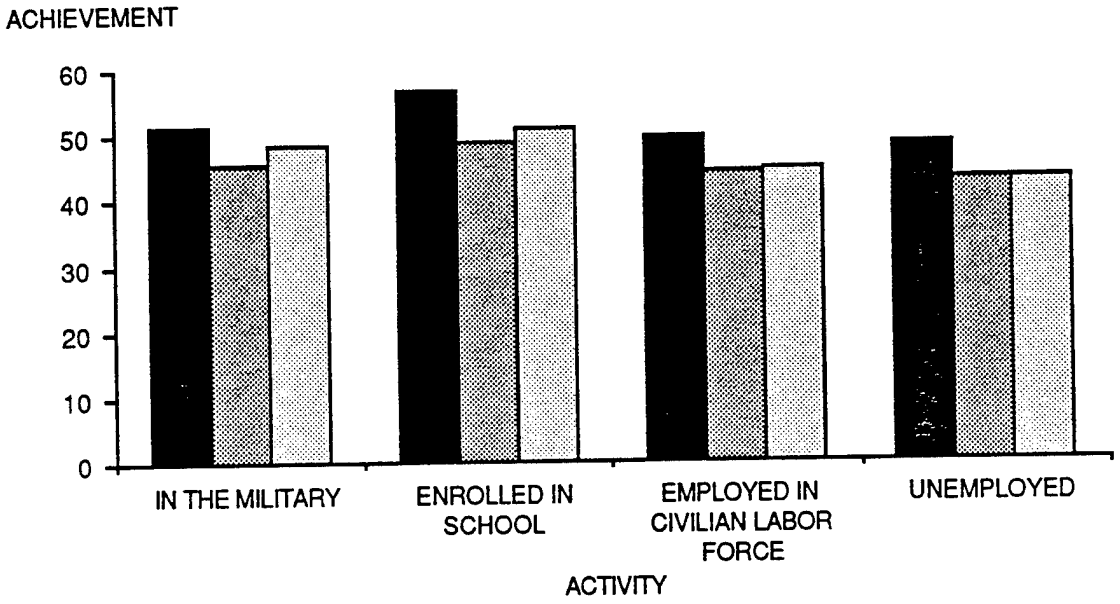
Next, we explore whether youth who plan to enter the military after high school are distinguished from those with other aspirations with respect to economic characteristics of the local labor markets in which they live. We examined three county-level measures: the unemployment rate and county per capita personal income in 1980, and percent employment growth from 1980 to 1981.

Beginning with unemployment rates, among whites, local unemployment rates are highest among those who plan to enlist and those who plan to work after graduating. For blacks, in contrast, the rate of local unemployment is lowest among those who aspire to enter the military. Similarly, the rate of growth in county employment is highest for blacks and Hispanics who intend to enlist in the military. Among Hispanics, county unemployment is highest among youth with "other" plans, such as to travel or to take time off.

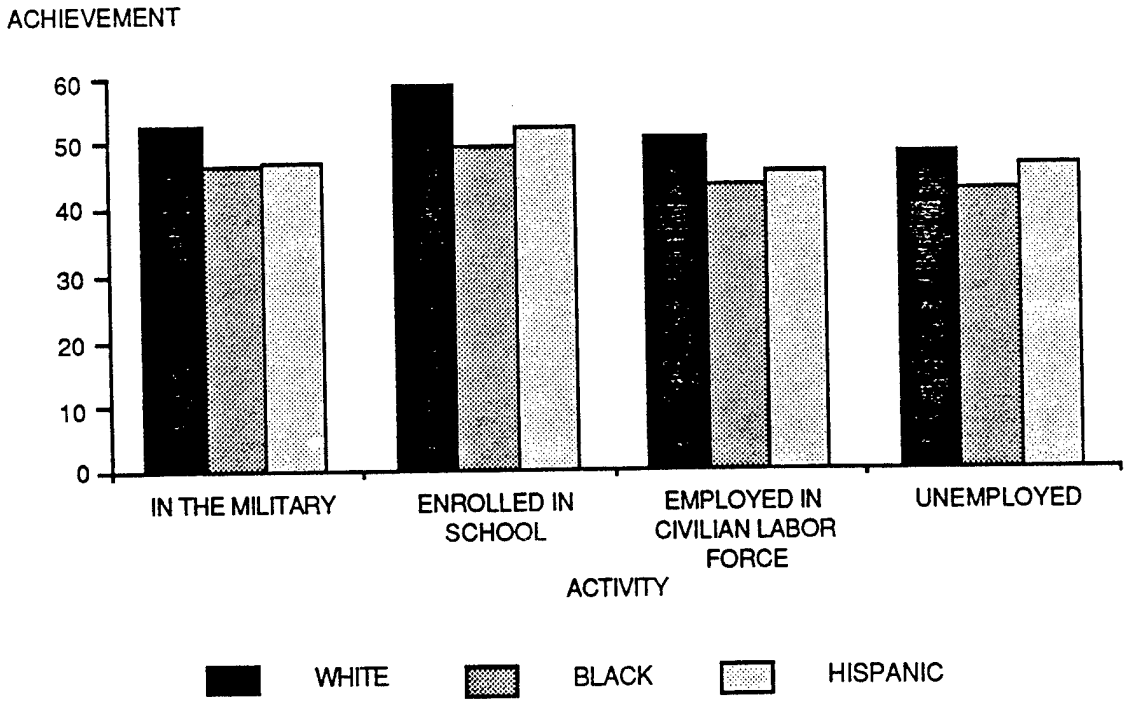
These results reinforce previous findings of differences by race in the effects of unemployment on enlistment (e.g., Huck and Allen, 1977). For all three racial/ethnic groups, however, we found that county per capita personal income is lowest among youth who plan to enter the military in comparison to youth with plans for all other post high school activities. It is unclear why this particular economic measure revealed different results than those observed using the unemployment variable.

FIGURE 6

Standardized Reading Achievement By Activity Two Years After High School And Race/Ethnicity



Standardized Math Achievement By Activity Two Years After High School And Race/Ethnicity



Academic Achievement

Predictably, youth with the highest levels of academic achievement plan to attend school after graduation, across all racial/ethnic groups (see Figure 6). Among Hispanics, young men who plan to enter the military are ranked next in high school GPA and reading and math achievement. Students with the lowest academic performance in all three racial/ethnic groups plan to work in the civilian labor force after high school.

Similarly, when the academic achievement of youth in the military, in school, working in the civilian labor force, and unemployed are compared two years after graduation the data reveal anticipated patterns. Youth enrolled in school had the highest high school achievement, followed by those in the military, those holding a civilian job, then the unemployed.

Mothers' Educational Expectations

In comparison to youth with other aspirations, mothers of youth with plans for postsecondary schooling have the highest educational expectations for their sons, across all racial/ethnic groups. Next in line among Hispanics, blacks, and whites are the educational expectations for youth who plan to enter the military. The same patterns are observed when post high school activities are examined for each group. More specifically, military enlistees expect to complete about a half year more schooling than their counterparts in the civilian work force. In some cases, this might make the difference in the completion of a degree or training program. Additionally, aspirations to attend college are more prevalent among enlistees than among those who were working or unemployed two years after high school. About half the military enlistees expressed intentions to attend college some day compared to approximately one-third of those in the work force. This is not unexpected since the military traditionally has been a route of upward mobility for economically disadvantaged youth.

Family Formation Expectations

The average age at which male youth expect to marry and have children varies little by post high school plans and activities or racial/ethnic group. As expected, across all three racial/ethnic groups, youth who plan to attend school expect to delay marriage and child bearing the longest. On average, whites and Hispanics with intentions to continue their schooling after high school expect to marry when they are 25. Youth with "other" plans also anticipate being older when they marry and have children. For blacks planning to enroll in a postsecondary school, the average age expected for getting married is 26. These same youth expect to have children shortly thereafter -- age 26 for blacks and Hispanics and age 27 for whites.

The average age at which black youth who plan to enter the military expect to marry is 25, which is the youngest age reported across all of the activity categories among blacks. Hispanics with military plans expect to be 25 on average when they marry, which is a year older than those who anticipate holding a civilian job after high school. The average age expected for marriage among white youth with plans for service is the youngest of all racial/ethnic groups -- 24. This is the same as the figure for white youth who anticipate civilian employment.

Among white and Hispanic youth with military plans, 26 is the average age for when they expect to have their first child. For blacks, the average is age 25.

Wage Expectations

In their senior year of high school youth were asked the lowest wages they would be willing to accept following high school graduation. Average responses were ranked from highest to lowest by post high school plans categories. Among all racial/ethnic groups, youth with plans to enter the military had the lowest wage requirements, although the differences in reported amounts were not sizable. This pattern is

somewhat less apparent when comparisons are made of responses across activity categories two years after high school.

Multivariate Results

Thus far, we have shown that there are important differences among Hispanic, black, and white youth who enter the military as well as for those who make other post high school choices. Here we attempt to estimate the process implied by the conceptual model through which family and labor market characteristics, expectations regarding family formation, expected wages, academic performance and aspirations affect enlistment decisions. This allows us to examine the effects of variables such as wage and family formation expectations while controlling for prior variables such as family socioeconomic status and local labor market characteristics.

To estimate the statistical model that reflects the conceptual framework shown in Figure 1 we used a two-pronged strategy. First, equations with an interval dependent variable or a variable that approximated an interval variable such as expected age at first birth and marriage, and grades attained in high school were estimated using ordinary least squares (OLS). Second, where the dependent variables were measured as dichotomous variables (e.g., whether proximity to home was important, military enlistment) maximum likelihood was used to estimate the model parameters. In these situations, the models were treated as probit equations. Using the parameter estimates, total, direct, and indirect effects were computed (Fox, 1985).[13] Estimates of total, direct, and indirect effects are presented for whites, blacks, and Hispanics in Appendix B. Appendix C shows the structural estimates from the probit and OLS

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[13]The direct effect shows the change in an outcome variable given a change in an independent variable while statistically holding constant all other variables in the model. The indirect effect shows the change in the dependent variable that occurs as a function of an independent variable operating through one or more intervening variables. The total effect is the sum of the direct and indirect effects.

regression models. These estimates were used to compute the total, direct, and indirect effects. Appendix D provides a technical description of the estimation of structural parameters and total and indirect effects.

Military Aspirations

Our results reveal a strong economic dimension to the plans that high school graduates formulate for their futures. Family income, desired wages, and even the prosperity of the local labor market have significant effects on military aspirations.

In general, the higher their family income the less likely are youth to plan to enter the military. The total effects of family income on military plans are negative for whites, blacks, and Hispanics. Moreover, the direct effects (i.e., the effects not mediated by intervening variables in the model) are large in all cases, with very little of the negative effects of family income mediated by other variables in the model. That is, our findings suggest that there is something intrinsic about family socioeconomic status itself, rather than the way family resources are mediated by other variables such as grades or mothers' educational expectations that influences youths' consideration of a military career.

Our findings also reveal that white and Hispanic youth who have higher expectations regarding wages are not as likely to plan to enlist as are youth with lower salary expectations. The direct effects of the wages youth would be willing to accept after high school on military aspirations are negative and significant for whites and Hispanics, and negative, but not significant for blacks. There are two possible explanations for these effects. It may be that youth who report that they would be unwilling to accept low wages do not possess accurate information about wage rates for military service, or military wages may not be sufficiently high to attract them to enlist.

The opportunity structure of the local labor market is also important. The direct effect of county per capita personal income is negative and significant for whites and blacks, and negative, but not statistically significant for Hispanics. The effects of county per capita income are almost entirely direct, with only a small portion operating through other variables in the model. These results suggest that the more economically prosperous the local labor market, the less inclined youth appear to be to plan to leave the local area for employment opportunities elsewhere, including the military. These findings are potentially important for directing recruitment strategies.

In addition to economic factors, our results suggest that the number of years of schooling that mothers expect youth to complete, grades in high school, and youths' own family formation plans are also important. The effects of mother's educational expectations are negative and statistically significant for whites, and although the effects are not statistically significant for blacks or Hispanics, the same pattern is apparent. In other words, the more education that a youth perceives his mother wants him to complete, the less likely he is to plan to enlist. Our results reinforce previous findings that the higher the educational expectations of parents, the greater is the likelihood that the youth will enroll in postsecondary school.

Grades have a negative and significant effect on military plans among whites, and a negative, but not statistically significant effect on the military aspirations of Hispanics. White and Hispanic youth who perform well academically are more inclined to make plans for postsecondary schooling rather than they are to plan to enlist. Among blacks however, the pattern of the effect of grades is opposite, although not significant. Planning to delay having children has a negative effect on military aspirations that is statistically significant for blacks. The same pattern emerges for Hispanics and whites, although the effects are not statistically significant. It may be that among youth who place importance on starting a family early, the military is

perceived to be not only a source of stable income, but also a way to obtain health care, housing allowances and other family-related benefits that make it easier to meet this goal.

Military Enlistment

Different patterns emerge for whites, blacks, and Hispanics in the variables that are important sources of influence on military enlistment. As expected, plans to enter the military formulated while still in high school have a positive and significant effect on actual military enlistment among all three groups.

Considered individually, three general patterns emerge among the factors that influence white, black, and Hispanic high school graduates to enter the military after high school. Military enlistment among Hispanics is primarily influenced by factors related to family formation. Among blacks the factors that influence military enlistment tend to be more economic than is true of Hispanics. Finally, there appears to be an important status attainment dimension that influences military enlistment among whites.

Beginning with Hispanics, the only factors (other than military aspirations in high school) that significantly and directly affect military enlistment among high school graduates are family formation expectations. The results related to family formation expectations, however, are not straightforward. On the one hand, the age at which Hispanic youth expect to marry positively affects military enlistment, suggesting that youth who plan to delay marriage are more favorably disposed to the life of the military than are those who plan to marry earlier. If expected age at first marriage provides a measure of traditional family values, it may be that more traditional Hispanics do not perceive the military to be a conducive environment for these goals or they may be reluctant to leave their own families or friends.

On the other hand, the age at which Hispanic youth expect to have their first child negatively affects military enlistment. In other words, the younger the youth expects to be when he has his first child the more likely he is to enter the military. There is a positive and significant effect of expected age at first child and postsecondary schooling, however, suggesting that Hispanic youth who plan to delay child-rearing do so to accommodate the completion of other goals, such as education, rather than the military service.

For Hispanics, we also examined the influence of speaking Spanish on military plans and enlistment. The data revealed that none of our measures of ethnic identification significantly influenced military aspirations or enlistment.

Among blacks, military enlistment is predominantly influenced by economic variables. For example, family size, which can be thought of as an indicator of the amount of competition that exists for parental and economic resources, has a negative and significant effect on military enlistment. In other words, as family size increases the propensity to enlist decreases. Moreover, the effect of family income for blacks, in contrast to Hispanics and whites, is positive and statistically significant, meaning that as family socioeconomic status increases the propensity to enter the military also increases. As discussed in the previous section, unlike whites and Hispanics, black enlistees show relative economic advantages in comparison to black youth who are working or unemployed after high school, and their average family incomes are similar to those of youth enrolled in postsecondary school.

This disparity in the effects of family income across racial/ethnic groups may be explained by differences in the level of occupational prestige ascribed to military service by members of different racial/ethnic groups. Black youth from families with moderate economic resources may be financially precluded from college attendance. For those with moderate incomes who place a high value on achievement the military

may provide an opportunity to gain occupational prestige as well as resources to attend school when their term of service is completed.

In addition, the level of county unemployment has a positive and significant effect on military enlistment among black youth. This suggests that the perception of the military as a favorable occupational alternative is enhanced when employment opportunities in the local community are limited. Moreover, discrimination against blacks in the market place may enhance the attractiveness of the military since it is an equal opportunity employer.

The amount of schooling that black youth perceive that their mothers want them to complete has a negative and significant effect on military enlistment. This is in keeping with previous findings in the status attainment literature.

Turning to findings related to whites, there appears to be a strong status attainment dimension that influences their military enlistment. In addition to the effects of plans for the military and family income already discussed above, the other significant factors observed for whites are plans for postsecondary schooling and grades. There is a negative and significant relationship observed between planning to enroll in school after high school and enlisting in the military. This suggests that the military, despite its programs for college tuition assistance, tends not to be perceived as a favorable alternative among white youth who anticipate that they will enroll in postsecondary school once they graduate from high school. Moreover, the greater the academic success of white youth, the less likely they are to enlist. These results are the opposite of the relationship observed between academic success and military enlistment observed by Myers and Ellman (1983). The explanation for this discrepancy may lie in the fact that while Myers and Ellman used a combined sample of youth, our analyses examined youths' enlistment patterns separately by racial/ethnic group. In

addition, Myers and Ellman used achievement test scores to measure academic success, while here we relied upon high school grade point average.

CHAPTER 5

SUMMARY AND IMPLICATIONS

Hispanics are the country's fastest growing minority group and will represent an increasingly larger share of potential recruits. Given that the overall population of 18 to 24 year olds is declining, rapid growth of the Hispanic population in this age group increases the importance of recruiting and retaining these youth in the military. As the proportion of Hispanic youth rises the competion to attract them will intensify among the military, business and higher education.

In developing recruiting strategies for the Hispanic market it is important to answer two questions: what are the sociodemographic characteristics of Hispanics in the U.S., and what is the military's potential for enlisting them? To answer the first question we provided a profile of Hispanics and revealed that there are considerable sociodemographic differences between Hispanics and the overall U.S. population, between Hispanics and non-Hispanics, and among individual Hispanic subgroups.

Hispanics lag behind the general U.S. population on all measures of social and economic well-being and are considerably more likely to be in female-headed families. When intergroup comparisons are made, it becomes apparent that the economic standing of Hispanics falls somewhere between that of blacks and whites. Hispanics are less well educated than whites and blacks. Moreover, nearly one-fourth of all Hispanic families are classified as poor, compared to 9 percent of white families and 28 percent of black families.

Among Hispanic subgroups, Puerto Ricans and Mexican Americans rank lowest on all measures of socioeconomic status and these groups are currently in the military in the greatest numbers. Currently, 28 percent of the armed forces are minority and 4 percent are of Spanish origin.

Inter-service comparisons reveal that Puerto Ricans, the subgroup with the lowest average family income are overrepresented in the military in general, and in the Army in particular. Puerto Ricans comprise 43 percent of the Hispanics currently in the Army, while they represent just 12 percent of the Hispanics in the U.S. This may be explained in part by the fact that many Puerto Rican young adults immigrate to the U.S. mainland for better economic prospects. The military may be seen as a favorable alternative when they face discrimination or limited job opportunities in the civilian labor force.

While Mexican Americans and Puerto Ricans are the largest of the Hispanic subgroups in the U.S., the "Other Hispanic" and Latin American populations are the fastest growing. Other Hispanics and Latin Americans will represent increasingly important targets for military recruiting. Like other immigrant groups before them, however, some possible obstacles these groups might face are problems with English and assimilation into American culture.

Since there are notable demographic differences among Hispanic subgroups ideally they should be studied separately, rather than in the aggregate. Limitations in the size of our sample prevented us from doing so in the present analysis, but this is an important area where further research is needed.

Another important demographic reality for manpower policy makers is the uneven geographic distribution of Hispanics in the U.S. Hispanics are heavily concentrated in a limited number of geographic locations. The five regions most heavily concentrated by Hispanics are the Southwest, Northeast, South Florida, Chicago and the Pacific Northwest. It is in these regions that the effects of shifts in the Hispanic population will be the greatest.

In addition to providing a sociodemographic description of Hispanics, we also considered the factors that influence Hispanic enlistment rates. Using a nationally

representative sample of high school sophomores and seniors we examined how youths' goals and expectations regarding post high school activities are shaped by their family background, ethnic and cultural influences, mothers' expectations, their own academic success, family formation expectations and the perceived and actual labor market opportunities available to them. Using survey information from high school and up to six years beyond we were able to examine how closely plans made while in high school matched actual activities engaged in after graduation.

Our results reinforce previous findings that youth who plan to enter the military have relatively low family socioeconomic status in comparison to youth who plan to continue their schooling beyond high school or get a civilian job. These findings are not unexpected since the military traditionally has been a route of upward mobility for the economically disadvantaged.

Our data also revealed that the intention to enlist is a surprisingly weak indicator of future enlistment behavior. When we compared the percentages of youth who planned to enlist in the military with the percentages who actually enlisted we found that a large proportion do not follow through on their intentions. In general, fewer than one-third of the male high school graduates who reported that they expected to be in the armed services or a service academy following high school were actually in the military two years after graduation. In comparison, nearly two-thirds of youth with plans for postsecondary schooling or civilian jobs were actually engaged in these activities two years later. An important implication of these findings is that recruiting efforts should be directed toward high school students and their guidance counselors. High school youth who are favorably predisposed to enter the service may be encouraged to take steps to enlist if they receive concrete information on benefits and career opportunities as well as reinforcement from school counselors.

Among actual military enlistees, Hispanics and whites tend to come from families with fewer economic resources than is true of black enlistees. More specifically, Hispanic high school graduates who enter the military generally come from large families with low incomes. The mothers of these youth tend to have relatively low levels of educational attainment. White male high school graduates who enter the military also tend to come from economically disadvantaged families, but among these youth family sizes are relatively small. The mothers of white enlistees have relatively high educational attainment.

Black enlistees are the most economically advantaged of the groups we examined. They have moderate family incomes levels and relatively few siblings. Given the level of educational aspirations observed for these youth, it appears that black high school graduates view the military favorably as a training opportunity when they are financially precluded from college attandance.

On the whole, the incidence of female-headed families is notable among male high school graduates who enter the military. Almost one-quarter of white enlistees come from families where mothers are the sole source of economic support. This is almost twice the percentage found in the overall white population. Comparable figures for Hispanic and black enlistees are 24 and 46 percent, respectively. It has been speculated elsewhere that youth from female-headed households may enter the military to escape familial conflict caused by marital strife or divorce. An implication of the high percentage of male enlistees from disrupted families is a potential lack of male role-modelling. This, with added pressures of military life, such as mobility, may lead to increased dysfunction among military families. This is a topic deserving of further research attention.

We also examined the extent to which ethnic identification or community ties predisposed Hispanic youth to choose particular post high school activities over others.

We used speaking Spanish at home or with companions at school or in the neighborhood as an indicator of ethnic identification and found that speaking Spanish does not differentiate those who choose the military from those who choose other activities. An important finding that deserves further study, however, is the high incidence of Hispanic enlistees who spoke Spanish at home while in high school.

An examination of the local labor market characteristics of youth who with different plans for after high school reinforced previous findings that county per capita income is lowest among those who plan to enter the military. When local unemployment rates were examined it became apparent that for whites, high unemployment is linked with military enlistment, however, this pattern did not emerge for blacks and Hispanics.

Predictably, high levels of academic achievement among male high school graduates were associated with plans for postsecondary schooling as well as actual enrollment. Youth who planned or actually entered the military were ranked next in high school GPA. Youth with the lowest academic performance in all three racial/ethnic groups plan to work in the civilian labor force after graduation.

The educational expectations of Hispanic, black, and white male youth who plan to enter the military are relatively high. Prospective enlistees are more likely than those who plan to work in the civilian labor force to express intentions to go to college some day. Moreover, with the exception of those with college plans, the educational expectations held by mothers for their sons are highest among those with intentions to enlist. These findings reinforce the notion that the military is seen as a training opportunity by youth as well as a vehicle for college attendance in the future. This has important implications for the types of incentives that the military should continue to use.

An examination of how expectations regarding family formation vary by the post high school plans revealed that the average age expected for marriage is lowest among whites and blacks with intentions to enlist in the armed forces. The typical responses among these youth was 24 and 25, respectively. The comparable figure for Hispanics with plans to enlist is also 25, but this is a year older than those with plans to remain in the civilian economy. Although obviously not all youth opt for reenlistment, and thus may complete their term of service before reaching age 24, these lower than average responses among those with military intentions suggest that prospective enlistees may place a somewhat greater emphasis on family formation than do those with plans to take a civilian job or go to school. An implication of these findings is that benefits to families may be important incentives for high school youth who consider military careers.

In addition, when the average wages that high school seniors would be willing to accept after high school are compared across post high school plans categories, we found that youth with intentions to enlist had the lowest wage requirements. This suggests that youth with higher salary expectations may not consider the military as a viable option. This finding has important implications for economic incentives used for recruitment.

Results from our multivariate analysis of the process that influences post high school choices revealed that there is a strong economic dimension to the plans that high school youth formulate for their futures. Family income, desired wages, and characteristics of the local labor market have significant effects on military aspirations.

Our results reveal that the higher the family income, the less likely are youth to plan to enter the military. Moreover, we found that there is something intrinsic about family socioeconomic status itself, rather than the way family resources are mediated

by other variables such as educational expectations, that influences youths' considerations of a military career.

In addition, we found that white and Hispanic youth who have higher expectations regarding wages are not as likely to plan to enlist as are youth with lower salary expectations. Moreover, our results indicated that the more economically prosperous the local labor market, as measured by county per capita income, the less inclined youth appear to be to plan to leave the local area for employment opportunities elsewhere, including the military.

When we examined patterns of enlistment separately by race we found that enlistment among Hispanics is predominantly influenced by their expectations regarding marriage and child-rearing. These results are not straightforward, however. On the one hand, the age at which Hispanic youth expect to marry positively affects military enlistment suggesting that youth who plan to delay marriage are more favorably disposed to the life of the military. These youth are possibly captivated by the military as adventure or opportunity to travel. On the other hand, there is a negative relationship between the age expected for their first child and military enlistment among Hispanics. We observed a positive and significant effect between expected age for child-rearing and postsecondary schooling, however. Thus, it may be that Hispanic youth who plan to delay child-rearing are very non-traditional and plan to do so to accommodate educational goals rather than military service.

Among blacks, in contrast, economic variables are key. Family size has a negative and significant effect on military service while family income has a positive effect. Our data suggest that for blacks with moderate incomes who place a high value on achievement the military may provide an opportunity to gain occupational prestige, training, and resources to attend school when their term of service is

completed. These findings underscore the importance of economic, training and educational incentives for enlistment among blacks.

There appears to be an important status attainment dimension to the military enlistment of white male high school graduates. We observed a negative and significant relationship between planning to enroll in school after high school and white military enlistment. This suggests that despite the military's programs for college tuition assistance the armed services tend not to be perceived as a favorable alternative among white males who anticipate that they will enroll in postsecondary school once they graduate from high school. Moreover, the greater the academic success of white youth, the less likely they are to enlist. These findings have important implications for the necessity of enhancing the awareness of educational incentive packages among white males who do well academically and who have high educational aspirations.

In sum, the present analysis revealed that across all three racial/ethnic groups enlistment intentions are primarily influenced by economic variables including family income, desired wages and characteristics of the local labor market. Different patterns emerged for Hispanics, blacks and whites in the variables that significantly influence actual military enlistment, however. Although for all three groups planning to enter the service has a positive and significant effect, military enlistment among Hispanics is primarily influenced by factors related to family formation. Among blacks, economic variables are most prominent, while there appears to be an important status attainment dimension to the enlistment decisions of whites.

BIBLIOGRAPHY

Ballantine, J.H. *The Sociology of Education.* Englewood Cliffs, New Jersey: Prentice-Hall, 1983.

Binkin, M., and Eitelberg, M. *Blacks and the military.* Washington, D.C.: Brookings Institution, 1982.

Bishop, J., and Van Dyk, J. Can adults be hooked on college?: Some determinants of adult college attendance. *Journal of Higher Education*, 1977, *48*, 39-62.

Blake, J. Family size and the quality of children. *Demography*, 1981, *18*, 321-342.

Blau, P.M., and Duncan, O.D. *The American occupational structure.* New York: The Free Press, 1967.

Bogie, D.W. Occupational apsiration-expectation discrepancies among high school seniors. *Vocational Guidance Quarterly, 1976, 24*, 250-255.

Boocock, S.S. *Sociology of Education: An Introduction* (2nd ed.) Boston: Houghton Mifflin, 1980.

Brookover, W.B. and Erickson, E.L. *Sociology of Education.* Homeword: Dorsey, 1975.

Burk, J. Patriotism and the All-Volunteer Force. *Journal of Political and Military Sociology*, 1984, *12*, 229-241.

Carliner, G. Returns to education for blacks, Anglos, and five Spanish groups. *The Journal of Human Resources*, 1976, *11*, 172-184.

Chisholm, R.F., Gauntner, D.E., and Munzenrider, R.F. Pre-enlistment expectations/perceptions of Army life, satisfaction, and re-enlistment of volunteers. *Journal of Political and Military Sociology*, 1980, *8*, 31-42.

Cooper, R.L. *Military manpower and the All-Volunteer Force* (R-1450-ARPA). Santa Monica, CA: The Rand Corporation, September 1977.

Davis, C., Haub, C., and Willette, J. U.S. Hispanics: Changing the Face of America, *Population Bulletin*, June 1983, *38*.

Edwards, L.N. The economics of schooling decisions: Teenage enrollment rates. *The Journal of Human Resources*, 1975, *10*, 155-173.

Ehrenberg, R.G., and Marcus, A.J. Minimum wages and teenagers' enrollment-employment outcomes: A multinomial logit model. *The Journal of Human Resources*, 1982, *12*, 39-58.

Estrada, L.F. Anticipating the Demographic Future. *Change*, May/June, 1988, 14-19.

Fernandez, R.L. *Forecasting enlisted supply: Projections for 1979-1990* (N-1297-MRAL). Santa Monica, CA: September 1979.

Fields, C. The Hispanic pipeline: Narrow, leaking and needing repair. *Change, May/June, 1988*, 20-27.

Fiorito, J. The school-to-work transition of college graduates. *Industrial and Labor Relations Review*, 1981, *35*, 103-114.

Fox, J. Effect analysis in structural equation models II: Calculation of specific indirect effects. *Sociology Methodology, 14*, 81-95.

Fuller, W.C., Manski, C.F., and Wise, D.A. New evidence on the economic determinants of postsecondary schooling choices. *The Journal of Human Resources*, 1982, *17*, 477-498.

Goldberg, L. *Summary of Navy enlisted supply study* (Professional Paper 391). Alexandria, VA: Center for Naval Analyses, July 1981.

Grenier, G. The effects of language characteristics on the wages of Hispanic-American males. *The Journal of Human Resources*, 1984, *19*, 35-52.

Griliches, Z., and Mason, W.M. Education, income, and ability. *Journal of Political Economy*, May-June 1972, *80*, S74-S103.

Haller, A.O. and Portes, A. Status attainment processes. *Sociology of Education*, 1973, *46*, 51-91.

Hansen, W.L. Total and private rates of return to investment in schooling. *Journal of Political Economy*, 1963, *81*, 128-141.

Hanushek, E.A., and Jackson, J.E. *Statistical methods for social scientists*. New York: Academic Press, 1977.

Haveman, R.H., and Wolfe, B.L. Schooling and economic well-being: The role of nonmarket effects. *The Journal of Human Resources*, 1984, *19*, 377-407.

Huck, D., and Allen, J. *Sustaining volunteer enlistments in the decade ahead: The effect of declining population and unemployment* (CR 242). McLean, VA: General Research Corporation, Operations Analysis Group, September 1977.

Huck, D., Kusmin, L., Shephard, E., and Hale, R. *Improving military educational benefits: Effects on costs, recruiting, and retention.* Washington, D.C.: Congressional Budget Office, March 1982.

Jud, G.D., and Walker, J.L. Racial differences in the returns to schooling and experience among prime-age males: 1967-1975. *The Journal of Human Resources*, 1982, *17*, 622-632.

Kahn, L.M., and Low, S.A. An empirical model of employed search, unemployed search, and nonsearch. *The Journal of Human Resources*, 1984, *19*, 104-117.

Kim, C. *Youth and the military services: 1980 National Longitudinal Survey studies of enlistment, intentions to serve, re-enlistment and labor market experience of veterans and attriters.* Columbus, OH: Center for Human Resource Research, The Ohio State University, May 1982. (NTIS No. AD-A125 722).

Kim, C. *The All-Volunteer Force: 1979 National Longitudinal Survey studies of enlistment, intentions to serve, and intentions to re-enlist.* Columbus, OH: Center for Human Resource Research, The Ohio State University, July 1982. (NTIS No. AD-A123 789).

Kim, C., and Nestel, G. Participation in the All-Volunteer Force: Its effect on civilian earnings. *Proceedings of the Business and Economics Statistics Section, American Statistical Association*, 1982, 440-444.

Kuvlesky, W.P., Wright, D.E. and Juarez, R.Z. Status projections and ethnicity: A comparison of Mexican American, Negro, and Anglo youth. *Journal of Vocational Behavior*, 1971, *1*, 137-151.

Land, K.C. Identification, parameter estimation, and hypothesis testing in recursive sociological models. In A.S. Goldberger and O.D. Duncan (eds.) *Structural Equation Models in the Social Sciences.* New York: Seminar Press, 1973.

Levine, A. Educational and occupational choice: A synthesis of literature from sociology and psychology, *Journal of Consumer Research*, 1976, *2*, 276-289.

Maddala, G.S. *Limited-dependent and qualitative variables in econometrics.* New York: Cambridge University Press, 1983.

Manski, C.F. and Wise, D.A. *College Choice in America.* Cambridge: Howard University Press, 1983.

Mare, R.D., and Winship, C. Structural equations and path analysis for discrete data. *American Journal of Sociology*, 1983, *89*, 54-110.

_____. *School enrollment, military enlistment, and the transition to work: Implications for the age pattern of employment.* (Discussion Paper Series #82-2). Chicago: Economics Research Center/NORC, June 1982.

Mare, R.D., Winship, C., and Kubitschek, W.N. The transition from youth to adult: Understanding the age pattern of employment. *American Journal of Sociology*, 1984, *90*, 326-358.

Marini, M.M. Sex differences in the determination of adolescent aspirations: A review of research. *Sex Roles*, 1978, *4*, 723-753.

Marini, M.M. Sex differences in the process of occupational attainment: A closer look. *Social Science Research*, 1980, *9*, 307-361.

Marini, M.M. Women's educational attainment and parenthood. *American Sociological Review, August* 1984, *49*, 491-511.

Miller, P.W., and Volker, P.A. On the determination of occupational attainment and mobility. *The Journal of Human Resources*, 1985, *20*, 197-213.

Mincer, J. *Schooling, experience, and earnings.* New York: Columbia University Press for the National Bureau of Economic Research, 1974.

Myers, D.E., and Ellman, F.M. *Early exits from high school and post-high school transitions.* Washington, D.C., Decision Resources Corporation, December 1983.

Myers, D.E., and Milne, A.M. *Mathematics achievement of language-minority students.* Washington, D.C., Decision Resources Corporation, February 1983.

National Center for Education Statistics. *Selected statistics on the education of Hispanics.* Washington, D.C.: Author, undated.

National Center for Education Statistics. *High School and Beyond 1980 senior cohort second follow-up.* Contractor Report. Data File Users Manual. Washington, D.C.: U.S. Department of Education, 1984a.

National Center for Education Statistics. *High School and Beyond 1980 sophomore cohort second follow-up.* Contractor Report. Data File Users Manual. Washington, D.C.: U.S. Department of Education, 1984b.

Nolfi, G.J. In transition: Post-high school experiences of American youth. In *Using Longitudinal Data in Career Counseling: New Directions for Education, Work, and Careers.* L. Solmon and N. Ochsner (eds.) San Francisco: Jossey-Bass, 1979.

Office of the Assistant Secretary of Defense (Manpower, Installations and Logistics). *Population representation in the active duty military services: Fiscal Year 1984.* Washington, D.C.: Department of Defense, June 1985.

Office of the Assistant Secretary of Defense (Manpower, Reserve Affairs, and Logistics). *Profile of American youth: 1980 nationwide administration of the Armed Services Vocational Aptitude Battery.* Washington, D.C.: Department of Defense, March 1982.

O'Neill, D.M. Racial differentials in teenage unemployment: A note on trends. *The Journal of Human Resources*, 1983, *17*, 295-306.

Quester, A.O., and Lockman, R.F. *The All-Volunteer Force: Outlook for the eighties and nineties* (Professional Paper 433). Alexandria, VA: Center for Naval Analyses, March 1984. (NTIS No. AD-A153 703).

Rosenthal, A.S., Baker, K., and Ginsburg, A. The effect of language background on achievement level and learning among elementary and school students. In *Sociology of Education*, 1983.

Santos, R. *Hispanic youth in the labor market.* Columbus, OH: Center for Human Resource Research, The Ohio State University, July 1983. (NTIS No. PB84-18073 6).

Segal, D.R., Segal, M.W., Holz, R.F., Norbo, G.J., Seeberg, R.S. and Wubena, W.L., Jr. Research note: Trends in the structure of Army families. *Journal of Political and Military Sociology*, 1976, *4*, 135-139.

Sewell, W.H., and Hauser, R.M. *Education, occupation and earnings.* New York: Academic Press, 1975.

Sewell, W.H., and Hauser, R.M. Causes and consequences of higher education: Models of the status attainment process. In W.H. Sewell, R.M. Hauser, and D.L. Featherman (Eds.), *Schooling and achievement in American society.* New York: Academic Press, 1976.

Sewell, W.H., and Shah, V.P. Socioeconomic status, intelligence, and the attainment of higher education. *Sociology of Education*, Winter 1967, *40* (1), 1-23.

Stolzenberg, R.M. (1979). The measurement and decomposition of causal effects in nonlinear and nonaddative models. In K.F. Schuessler (Ed.), *Sociological Methodology.* San Francisco: Jossey-Bass, 1980.

Timperley, S.R. and Gregory, A.M. Some factors affecting career choice and career perceptions of sixth form school leavers. In W.H. Williams (ed.) *Occupation Choice.* London: George Allen and Lundwin, 1974.

U.S. Bureau of the Census, Gregory Spencer, Projections of the Hispanic population: 1983 to 2080, *Current Population Reports*, Series P-25, No. 995, Washington, D.C.: U.S. Government Printing Office, 1986.

U.S. Bureau of the Census, The Hispanic population in the United States: March 1986 and 1987 (Advance Report) *Current Population Reports*, Series P-20, No. 416, Washington, D.C.: U.S. Government Printing Office, August 1987.

Veltman, C.J. *Relative educational attainments of minority language children, 1976: A comparison to black and white English language children.* Contractor Report (NCES 81-100). Washington, D.C.: National Center for Education Statistics, June 1980.

Wagenaar, T.C. Factors affecting consistency between adolescents' activities and plans, *Humboldt Journal of Social Relations*, 1984.

APPENDIX A

BREAKDOWNS OF HISPANICS IN ANALYTIC SAMPLE, BY SUBGROUP

TABLE A-1

Sample of Hispanic Male High School Graduates,
by Subgroup: 1980

Type	Percent
Mexican, Mexican American, Chicano	45
Puerto Rican, Puertorriquano	8
Cuban, Cubano	9
Latino, Hispanic, or Spanish Decent	21
Other	17
	100

N = 1095 (sample of Hispanic males in senior cohort in 1980). Tables values based on unweighted data.

Source: High School and Beyond Survey, Center for Education Statistics, U.S. Department of Education.

APPENDIX B

ESTIMATES OF TOTAL, DIRECT AND INDIRECT EFFECTS

TABLE B-1

Estimates of Total Effects of Family Background, Local Labor Market Characteristics, Schooling Experiences, Family Formation Plans, and Wage Expectations on Military Aspirations and Enlistment for White Male High School Graduates

	Independent and Predetermined Variables													
Dependent Variables	CONSTANT	MOTHERED	INCOME	NUMSIBS	CUNEMR80	CEMPG01	CPCPI80	GRADES	MOMASP	IMPHOME	AGEFCH	AGEFMAR	WAGES	PLANMIL
GRADES	2.0030	0.0643	0.0200	-0.0291	--	--	--	--	--	--	--	--	--	--
MOMASP	11.6365	0.2055	0.1125	-0.0520	-0.0085	0.0036	0.0575	0.6263	--	--	--	--	--	--
IMPHOME	0.3167	-0.0111	0.0041	0.0026	0.0000	0.0000	0.0000	0.0000	--	--	--	--	--	--
AGEFCH	23.6095	0.1307	0.1071	-0.0532	-0.0098	-0.0074	0.1033	0.2811	0.1333	-0.4496	--	--	--	--
AGEFMAR	21.6140	0.1271	0.0613	-0.0612	0.0024	-0.0212	0.1343	0.1396	0.1233	-0.4508	--	--	--	--
WAGES	3.2218	-0.0188	0.0399	0.0047	0.0012	0.0008	0.0203	-0.0249	-0.0162	0.0000	--	--	--	--
PLANMIL	-0.0655	-0.0035	-0.0080	0.0030	0.0009	0.0002	-0.0037	-0.0140	-0.0044	-0.0024	-0.0012	0.0009	-0.0130	--
MIL	-0.0940	-0.0006	-0.0109	0.0011	0.0000	0.0015	-0.0031	-0.0108	-0.0032	-0.0083	-0.0025	0.0006	0.0018	0.1136

Note: CONSTANT = intercept term in equation; MOTHERED = years of mother's education; INCOME = family income in tens of thousands of dollars; NUMSIBS = number of siblings; CUNEMR80 = county unemployment rate in 1980; CEMPG01 = county rate of employment growth 1980 to 1981; CPCPI = county per capita personal income in 1980; GRADES = high school GPA; MOMASP = mothers' educational aspirations for youth in years of schooling; IMPHOME = whether youth considers proximity to home important, AGEFCH = age at which youth expects to have first child; AGEFMAR = age at which youth expects to marry for the first time; WAGES = lowest hourly wages youth would be willing to accept after high school in dollars; PLANMIL = whether youth plans to be in the military in the year following high school; MIL = whether youth is in the military two years after high school.

TABLE B-2

Estimates of Direct Effects of Family Background, Local Labor Market Characteristics, Schooling Experiences, Family Formation Plans, and Wage Expectations on Military Aspirations and Enlistment for White Male High School Graduates

	Independent and Predetermined Variables													
Dependent Variables	CONSTANT	MOTHERED	INCOME	NUMSIBS	CUNEMR80	CEMPG01	CPCPI80	GRADES	MOMASP	IMPHOME	AGEFCH	AGEFMAR	WAGES	PLANMIL
GRADES	2.0030	0.0643	0.0200	-0.0291	--	--	--	--	--	--	--	--	--	--
MOMASP	10.3820	0.1652	0.1000	-0.0338	-0.0085	0.0036	0.0575	0.6263	--	--	--	--	--	--
IMPHOME	0.3167	-0.0111	0.0041	0.0026	0.0000	0.0000	0.0000	0.0000	--	--	--	--	--	--
AGEFCH	21.8050	0.0856	0.0900	-0.0394	-0.0087	-0.0079	0.0956	0.1976	0.1333	-0.4496	--	--	--	--
AGEFMAR	20.1970	0.0928	0.0480	-0.0518	0.0034	-0.0216	0.1272	0.0624	0.1233	-0.4508	--	--	--	--
WAGES	3.4400	-0.0145	0.0420	0.0034	0.0011	0.0008	0.0212	-0.0148	-0.0162	0.0000	--	--	--	--
PLANMIL	0.0612	-0.0020	-0.0067	0.0025	0.0009	0.0002	-0.0031	-0.0112	-0.0046	-0.0026	-0.0012	0.0009	-0.0130	--
MIL	-0.0853	0.0014	-0.0084	-0.0000	-0.0003	0.0014	-0.0023	-0.0024	0.0009	-0.0087	-0.0020	0.0006	0.0022	0.1136

Note: CONSTANT = intercept term in equation; MOTHERED = years of mother's education; INCOME = family income in tens of thousands of dollars; NUMSIBS = number of siblings; CUNEMR80 = county unemployment rate in 1980; CEMPG01 = county rate of employment growth 1980 to 1981; CPCPI = county per capita personal income in 1980; GRADES = high school GPA; MOMASP = mothers' educational aspirations for youth in years of schooling; IMPHOME = whether youth considers proximity to home important, AGEFCH = age at which youth expects to have first child; AGEFMAR = age at which youth expects to marry for the first time; WAGES = lowest hourly wages youth would be willing to accept after high school in dollars; PLANMIL = whether youth plans to be in the military in the year following high school; MIL = whether youth is in the military two years after high school.

TABLE B-3

Estimates of Indirect Effects of Family Background, Local Labor Market Characteristics, Schooling Experiences, Family Formation Plans, and Wage Expectations on Military Aspirations and Enlistment for White Male High School Graduates

	Independent and Predetermined Variables													
Dependent Variables	CONSTANT	MOTHERED	INCOME	NUMSIBS	CUNEMR80	CEMPG01	CPCPI80	GRADES	MOMASP	IMPHOME	AGEFCH	AGEFMAR	WAGES	PLANMIL
GRADES	0.0000	0.0000	0.0000	0.0000	--	--	--	--	--	--	--	--	--	--
MOMASP	1.2545	0.0403	0.0125	-0.0182	0.0000	0.0000	0.0000	0.0000	--	--	--	--	--	--
IMPHOME	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	--	--	--	--	--	--
AGEFCH	1.8045	0.0451	0.0171	-0.0138	-0.0011	0.0005	0.0077	0.0835	0.0000	0.0000	--	--	--	--
AGEFMAR	1.4170	0.0343	0.0133	-0.0094	-0.0010	0.0004	0.0071	0.0772	0.0000	0.0000	--	--	--	--
WAGES	-0.2182	-0.0043	-0.0021	0.0013	0.0001	-0.0001	-0.0009	-0.0101	0.0000	0.0000	--	--	--	--
PLANMIL	-0.1267	-0.0014	-0.0013	0.0005	0.0000	-0.0000	-0.0005	-0.0028	0.0002	0.0001	--	--	--	--
MIL	-0.0087	-0.0020	-0.0025	0.0011	0.0003	0.0001	-0.0009	-0.0084	-0.0041	0.0083	-0.0005	0.0000	-0.0005	--

Note: CONSTANT = intercept term in equation; MOTHERED = years of mother's education; INCOME = family income in tens of thousands of dollars; NUMSIBS = number of siblings; CUNEMR80 = county unemployment rate in 1980; CEMPG01 = county rate of employment growth 1980 to 1981; CPCPI = county per capita personal income in 1980; GRADES = high school GPA; MOMASP = mothers' educational aspirations for youth in years of schooling; IMPHOME = whether youth considers proximity to home important, AGEFCH = age at which youth expects to have first child; AGEFMAR = age at which youth expects to marry for the first time; WAGES = lowest hourly wages youth would be willing to accept after high school in dollars; PLANMIL = whether youth plans to be in the military in the year following high school; MIL = whether youth is in the military two years after high school.

TABLE B-4

Estimates of Total Effects of Family Background, Local Labor Market Characteristics, Schooling Experiences, Family Formation Plans, and Wage Expectations on Military Aspirations and Enlistment for Black Male High School Graduates

	Independent and Predetermined Variables													
Dependent Variables	CONSTANT	MOTHERED	INCOME	NUMSIBS	CUNEMR80	CEMPG01	CPCPI80	GRADES	MOMASP	IMPHOME	AGEFCH	AGEFMAR	WAGES	PLANMIL
GRADES	2.3220	0.0106	0.0300	0.0130	--	--	--	--	--	--	--	--	--	--
MOMASP	12.8476	0.1493	0.1072	-0.0297	0.0206	-0.0122	0.0076	0.2410	--	--	--	--	--	--
IMPHOME	0.4786	-0.0204	-0.0143	-0.0071	0.0000	0.0000	0.0000	0.0000	--	--	--	--	--	--
AGEFCH	22.8027	0.2329	0.2181	-0.1080	-0.0530	0.0323	0.0437	0.2493	0.0331	-0.5074	--	--	--	--
AGEFMAR	26.6166	0.1266	0.0934	-0.0894	-0.0592	0.0252	0.0711	0.4132	0.1127	-0.6782	--	--	--	--
WAGES	2.9209	0.0052	0.0619	0.0167	0.0055	-0.0036	0.0164	0.0308	0.0098	0.0000	--	--	--	--
PLANMIL	-0.0394	-0.0034	-0.0147	0.0022	0.0002	0.0004	-0.0092	0.0026	-0.0074	-0.0128	-0.0056	0.0027	0.0020	--
MIL	-0.1680	-0.0079	0.0110	-0.0071	0.0065	-0.0012	-0.0004	-0.0001	-0.0126	-0.0011	0.0006	0.0043	-0.0033	0.1272

Note: CONSTANT = intercept term in equation; MOTHERED = years of mother's education; INCOME = family income in tens of thousands of dollars; NUMSIBS = number of siblings; CUNEMR80 = county unemployment rate in 1980; CEMPG01 = county rate of employment growth 1980 to 1981; CPCPI = county per capita personal income in 1980; GRADES = high school GPA; MOMASP = mothers' educational aspirations for youth in years of schooling; IMPHOME = whether youth considers proximity to home important, AGEFCH = age at which youth expects to have first child; AGEFMAR = age at which youth expects to marry for the first time; WAGES = lowest hourly wages youth would be willing to accept after high school in dollars; PLANMIL = whether youth plans to be in the military in the year following high school; MIL = whether youth is in the military two years after high school.

TABLE B-5

Estimates of Direct Effects of Family Background, Local Labor Market Characteristics, Schooling Experiences, Family Formation Plans, and Wage Expectations on Military Aspirations and Enlistment for Black Male High School Graduates

	Independent and Predetermined Variables													
Dependent Variables	CONSTANT	MOTHERED	INCOME	NUMSIBS	CUNEMR80	CEMPG01	CPCPI80	GRADES	MOMASP	IMPHOME	AGEFCH	AGEFMAR	WAGES	PLANMIL
GRADES	2.3220	0.0106	0.0300	0.0130	--	--	--	--	--	--	--	--	--	--
MOMASP	12.2880	0.1467	0.1000	-0.0328	0.0206	-0.0122	0.0076	0.2410	--	--	--	--	--	--
IMPHOME	0.4786	-0.0204	-0.0143	-0.0071	0.0000	0.0000	0.0000	0.0000	--	--	--	--	--	--
AGEFCH	22.0600	0.2150	0.2000	-0.1138	-0.0537	0.0327	0.0434	0.2413	0.0331	-0.5074	--	--	--	--
AGEFMAR	24.5970	0.0918	0.0600	-0.0959	-0.0615	0.0266	0.0702	0.3860	0.1127	-0.6782	--	--	--	--
WAGES	2.7290	0.0034	0.0600	0.0166	0.0053	-0.0035	0.0163	0.0284	0.0098	0.0000	--	--	--	--
PLANMIL	0.1039	-0.0017	-0.0134	0.0014	0.0003	0.0004	-0.0091	0.0046	-0.0075	-0.0138	-0.0056	0.0027	0.0020	--
MIL	-0.1274	-0.0065	0.0136	-0.0072	0.0070	-0.0015	0.0006	0.0004	-0.0126	0.0033	0.0012	0.0041	-0.0038	0.1272

Note: CONSTANT = intercept term in equation; MOTHERED = years of mother's education; INCOME = family income in tens of thousands of dollars; NUMSIBS = number of siblings; CUNEMR80 = county unemployment rate in 1980; CEMPG01 = county rate of employment growth 1980 to 1981; CPCPI = county per capita personal income in 1980; GRADES = high school GPA; MOMASP = mothers' educational aspirations for youth in years of schooling; IMPHOME = whether youth considers proximity to home important, AGEFCH = age at which youth expects to have first child; AGEFMAR = age at which youth expects to marry for the first time; WAGES = lowest hourly wages youth would be willing to accept after high school in dollars; PLANMIL = whether youth plans to be in the military in the year following high school; MIL = whether youth is in the military two years after high school.

TABLE B-6

Estimates of Indirect Effects of Family Background, Local Labor Market Characteristics, Schooling Experiences, Family Formation Plans, and Wage Expectations on Military Aspirations and Enlistment for Black Male High School Graduates

	Independent and Predetermined Variables													
Dependent Variables	CONSTANT	MOTHERED	INCOME	NUMSIBS	CUNEMR80	CEMPG01	CPCPI80	GRADES	MOMASP	IMPHOME	AGEFCH	AGEFMAR	WAGES	PLANMIL
GRADES	0.0000	0.0000	0.0000	0.0000	--	--	--	--	--	--	--	--	--	--
MOMASP	0.5596	0.0026	0.0072	0.0031	0.0000	0.0000	0.0000	--	--	--	--	--	--	--
IMPHOME	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	--	--	--	--	--	--	--
AGEFCH	0.7427	0.0179	0.0181	0.0058	0.0007	-0.0004	0.0003	0.0080	0.0000	0.0000	--	--	--	--
AGEFMAR	2.0196	0.0348	0.0334	0.0065	0.0023	-0.0014	0.0009	0.0272	0.0000	0.0000	--	--	--	--
WAGES	0.1919	0.0018	0.0019	0.0001	0.0002	-0.0001	0.0001	0.0024	0.0000	0.0000	--	--	--	--
PLANMIL	-0.1433	0.0017	-0.0013	0.0008	-0.0000	-0.0000	-0.0001	-0.0020	0.0001	0.0010	--	--	--	--
MIL	-0.0406	-0.0014	-0.0026	0.0001	-0.0005	0.0003	-0.0010	-0.0004	-0.0000	-0.0044	-0.0006	0.0003	0.0006	0.0000

Note: CONSTANT = intercept term in equation; MOTHERED = years of mother's education; INCOME = family income in tens of thousands of dollars; NUMSIBS = number of siblings; CUNEMR80 = county unemployment rate in 1980; CEMPG01 = county rate of employment growth 1980 to 1981; CPCPI = county per capita personal income in 1980; GRADES = high school GPA; MOMASP = mothers' educational aspirations for youth in years of schooling; IMPHOME = whether youth considers proximity to home important, AGEFCH = age at which youth expects to have first child; AGEFMAR = age at which youth expects to marry for the first time; WAGES = lowest hourly wages youth would be willing to accept after high school in dollars; PLANMIL = whether youth plans to be in the military in the year following high school; MIL = whether youth is in the military two years after high school.

TABLE B-7

Estimates of Total Effects of Family Background, Local Labor Market Characteristics, Schooling Experiences, Family Formation Plans, and Wage Expectations on Military Aspirations and Enlistment for Hispanic Male High School Graduates

	Independent and Predetermined Variables													
Dependent Variables	CONSTANT	MOTHERED	INCOME	NUMSIBS	CUNEMR80	CEMPG01	CPCPI80	GRADES	MOMASP	IMPHOME	AGEFCH	AGEFMAR	WAGES	PLANMIL
GRADES	2.1030	0.0205	0.5000	0.0179	--	--	--	--	--	--	--	--	--	--
MOMASP	11.6919	0.1021	0.3155	0.0068	0.0230	-0.0028	0.1335	0.5910	--	--	--	--	--	--
IMPHOME	0.1647	-0.0057	0.0505	0.0041	0.0000	0.0000	0.0000	0.0000	--	--	--	--	--	--
AGEFCH	23.8966	0.0850	0.1761	0.0195	-0.0101	-0.0042	0.0986	0.3913	0.2033	-0.4278	--	--	--	--
AGEFMAR	21.0435	0.0798	0.0076	0.0732	0.0224	-0.0155	0.2426	0.1938	0.1323	-0.0390	--	--	--	--
WAGES	3.1047	-0.0133	0.0833	0.0111	-0.0132	-0.0014	0.0256	0.0262	0.0102	0.0000	--	--	--	--
PLANMIL	-0.1890	0.0036	-0.0183	0.0027	-0.0012	0.0002	-0.0003	-0.0072	-0.0011	-0.0083	-0.0023	0.0026	-0.0243	--
MIL	-0.0936	-0.0033	-0.0077	-0.0004	0.0023	0.0001	-0.0014	-0.0118	-0.0012	-0.0044	-0.0075	0.0031	-0.0033	0.0817

Note: CONSTANT = intercept term in equation; MOTHERED = years of mother's education; INCOME = family income in tens of thousands of dollars; NUMSIBS = number of siblings; CUNEMR80 = county unemployment rate in 1980; CEMPG01 = county rate of employment growth 1980 to 1981; CPCPI = county per capita personal income in 1980; GRADES = high school GPA; MOMASP = mothers' educational aspirations for youth in years of schooling; IMPHOME = whether youth considers proximity to home important, AGEFCH = age at which youth expects to have first child; AGEFMAR = age at which youth expects to marry for the first time; WAGES = lowest hourly wages youth would be willing to accept after high school in dollars; PLANMIL = whether youth plans to be in the military in the year following high school; MIL = whether youth is in the military two years after high school.

TABLE B-8

Estimates of Direct Effects of Family Background, Local Labor Market Characteristics, Schooling Experiences, Family Formation Plans, and Wage Expectations on Military Aspirations and Enlistment for Hispanic Male High School Graduates

	Independent and Predetermined Variables													
Dependent Variables	CONSTANT	MOTHERED	INCOME	NUMSIBS	CUNEMR80	CEMPG01	CPCPI80	GRADES	MOMASP	IMPHOME	AGEFCH	AGEFMAR	WAGES	PLANMIL
GRADES	2.1030	0.0205	0.5000	0.0179	--	--	--	--	--	--	--	--	--	--
MOMASP	10.4490	0.0900	0.0200	-0.0038	0.0230	-0.0028	0.1335	0.5910	--	--	--	--	--	--
IMPHOME	0.1647	-0.0057	0.0505	0.0041	0.0000	0.0000	0.0000	0.0000	--	--	--	--	--	--
AGEFCH	21.0200	0.0562	-0.0020	0.0150	-0.0148	-0.0036	0.0715	0.2711	0.2033	-0.4278	--	--	--	--
AGEFMAR	19.2600	0.0637	-0.0900	0.0704	0.0194	-0.0151	0.2249	0.1156	0.1323	-0.0390	--	--	--	--
WAGES	2.9430	-0.0148	0.0700	0.0107	-0.0134	-0.0014	0.0242	0.0202	0.0102	0.0000	--	--	--	--
PLANMIL	-0.0907	0.0035	-0.0123	0.0030	-0.0016	0.0001	-0.0000	-0.0058	-0.0007	-0.0091	-0.0023	0.0026	-0.0243	--
MIL	0.0273	-0.0031	0.0007	-0.0006	0.0024	0.0001	-0.0013	-0.0083	0.0013	-0.0066	-0.0073	0.0030	-0.0011	0.0817

Note: CONSTANT = intercept term in equation; MOTHERED = years of mother's education; INCOME = family income in tens of thousands of dollars; NUMSIBS = number of siblings; CUNEMR80 = county unemployment rate in 1980; CEMPG01 = county rate of employment growth 1980 to 1981; CPCPI = county per capita personal income in 1980; GRADES = high school GPA; MOMASP = mothers' educational aspirations for youth in years of schooling; IMPHOME = whether youth considers proximity to home important, AGEFCH = age at which youth expects to have first child; AGEFMAR = age at which youth expects to marry for the first time; WAGES = lowest hourly wages youth would be willing to accept after high school in dollars; PLANMIL = whether youth plans to be in the military in the year following high school; MIL = whether youth is in the military two years after high school.

TABLE B-9

Estimates of Indirect Effects of Family Background, Local Labor Market Characteristics, Schooling Experiences, Family Formation Plans, and Wage Expectations on Military Aspirations and Enlistment for Hispanic Male High School Graduates

	Independent and Predetermined Variables													
Dependent Variables	CONSTANT	MOTHERED	INCOME	NUMSIBS	CUNEMR80	CEMPG01	CPCPI80	GRADES	MOMASP	IMPHOME	AGEFCH	AGEFMAR	WAGES	PLANMIL
GRADES	0.0000	0.0000	0.0000	0.0000	--	--	--	--	--	--	--	--	--	--
MOMASP	1.2429	0.0121	0.2955	0.0106	0.0000	0.0000	0.0000	0.0000	--	--	--	--	--	--
IMPHOME	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	--	--	--	--	--	--
AGEFCH	2.8766	0.0288	0.1781	0.0045	0.0047	-0.0006	0.0271	0.1202	0.0000	0.0000	--	--	--	--
AGEFMAR	1.7835	0.0161	0.0976	0.0028	0.0030	-0.0004	0.0177	0.0782	0.0000	0.0000	--	--	--	--
WAGES	0.1617	0.0015	0.0133	0.0004	0.0002	-0.0000	0.0014	0.0060	0.0000	0.0000	--	--	--	--
PLANMIL	-0.0982	0.0002	-0.0060	-0.0003	0.0004	0.0000	-0.0003	-0.0015	-0.0004	0.0009	--	--	--	--
MIL	-0.1209	-0.0002	-0.0084	0.0002	-0.0000	-0.0000	-0.0002	-0.0036	-0.0025	0.0021	-0.0002	0.0001	-0.0022	0.0000

Note: CONSTANT = intercept term in equation; MOTHERED = years of mother's education; INCOME = family income in tens of thousands of dollars; NUMSIBS = number of siblings; CUNEMR80 = county unemployment rate in 1980; CEMPG01 = county rate of employment growth 1980 to 1981; CPCPI = county per capita personal income in 1980; GRADES = high school GPA; MOMASP = mothers' educational aspirations for youth in years of schooling; IMPHOME = whether youth considers proximity to home important, AGEFCH = age at which youth expects to have first child; AGEFMAR = age at which youth expects to marry for the first time; WAGES = lowest hourly wages youth would be willing to accept after high school in dollars; PLANMIL = whether youth plans to be in the military in the year following high school; MIL = whether youth is in the military two years after high school.

APPENDIX C

STRUCTURAL ESTIMATES FROM PROBIT AND OLS REGRESSION MODELS

TABLE C-1

Structural Estimates from Probit and OLS Regression
Models for White Male High School Graduates

Independent and Predetermined Variables	Dependent Variables							
	GRADES	MOMASP	IMPHOME	AGEFCH	AGEFMAR	WAGES	PLANMIL	MIL
MOTHERED	.0643*	.1653*	-.0327*	.0856*	.0928*	-.0145*	-.0244	.0166
INCOME	.0000*	.0000*	.0000	.0000*	.0000	.0000*	-.0000*	-.0000*
NUMSIBS	-.0209*	.0337*	.0076	-.0394	-.0518*	.0034	.0295	-.0000
CUNEMR80		.0085		-.0087	.0034	.0011	.0103	-.0031
CEMPG01		.3596		-.0079	-.0216	.0008	.0271	-.0165
CPCPI		.0575*		.0956*	.1272*	.0212*	-.0375*	-.0274
GRADES		.6263*		.1976*	.0624	-.0148	-.1344*	-.0283
MOMASP				.1332*	.1233*	-.0162*	-.0550*	-.0111
IMPHOME				-.4496*	-.4508*		-.0308	-.1040
AGEFCH							-.0142	-.0243
AGEFMAR							.0109	.0067
WAGES							-.1554*	.0269
PLANMIL								1.3605*

Note: * indicates t-value >2

MOTHERED = years of mother's education; INCOME = family income in tens of thousands of dollars; NUMSIBS = number of siblings; CUNEMR80 = county unemployment rate in 1980; CEMPG01 = county rate of employment growth 1980 to 1981; CPCPI = county per capita personal income in 1980; GRADES = high school GPA; MOMASP = mothers' educational aspirations for youth in years of schooling; IMPHOME = whether youth considers proximity to home important, AGEFCH = age at which youth expects to have first child; AGEFMAR = age at which youth expects to marry for the first time; WAGES = lowest hourly wages youth would be willing to accept after high school in dollars; PLANMIL = whether youth plans to be in the military in the year following high school; MIL = whether youth is in the military two years after high school.

TABLE C-2

Structural Estimates from Probit and OLS Regression
Models for Black Male High School Graduates

Independent and Predetermined Variables	Dependent Variables							
	GRADES	MOMASP	IMPHOME	AGEFCH	AGEFMAR	WAGES	PLANMIL	MIL
MOTHERED	.0106	.1467*	-.0571*	.2150*	.0918	.0034	-.0114	-.0477
INCOME	.0000*	.0000*	-.0000	.0000	.0000	.0000*	-.0000	-.0000*
NUMSIBS	.0130	-.0328*	-.0198	-.1138*	-.0959*	.0166*	.0097	-.0526*
CUNEMR80		.0206		-.0537	-.0615	.0053	.0017	.0516*
CEMPG01		-.0122		.0327	.0266	-.0035	.0027	-.0109
CPCPI		.0076		.0434	.0702	.0163*	-.0610*	.0041
GRADES		.2407*		.2413	-.3860*	.0284	.0309	.0028
MOMASP				.0331*	.1127	.0098	-.0504	-.0916*
IMPHOME				-.5074	-.6782*		-.0929	.0243
AGEFCH							-.0374*	.0091
AGEFMAR							.0178	.0297
WAGES							.0131	-.0279
PLANMIL								.9324*

Note: * indicates t-value >2

MOTHERED = years of mother's education; INCOME = family income in tens of thousands of dollars; NUMSIBS = number of siblings; CUNEMR80 = county unemployment rate in 1980; CEMPG01 = county rate of employment growth 1980 to 1981; CPCPI = county per capita personal income in 1980; GRADES = high school GPA; MOMASP = mothers' educational aspirations for youth in years of schooling; IMPHOME = whether youth considers proximity to home important, AGEFCH = age at which youth expects to have first child; AGEFMAR = age at which youth expects to marry for the first time; WAGES = lowest hourly wages youth would be willing to accept after high school in dollars; PLANMIL = whether youth plans to be in the military in the year following high school; MIL = whether youth is in the military two years after high school.

TABLE C-3

Structural Estimates from Probit and OLS Regression
Models for Hispanic Male High School Graduates

Independent and Predetermined Variables	Dependent Variables							
	GRADES	MOMASP	IMPHOME	AGEFCH	AGEFMAR	WAGES	PLANMIL	MIL
MOTHERED	.0205*	.0908*	-.0339*	.0562	.0637*	-.0148	.0280	-.0419
INCOME	.0000*	.0000	.0000	-.0000	-.0000	.0000*	-.0000*	.0000
NUMSIBS	.0179*	-.0038	.0241	.0150	.0704	.0107	.0243	-.0848
CUNEMR80		.0231		-.0148	.0194	-.0134*	-.0131	.0322
CEMPG01		-.0028		-.0036	-.0151	-.0014	.0012	.0012
CPCPI		.1335*		.0715	.2249*	-.0242*	-.0001	-.0165
GRADES		.5911*		.2711*	.1156	.0202	-.0468	-.1115
MOMASP				.2033*	.1323*	.0102	-.0059	.0178
IMPHOME				-.4278*	-.0390		-.0742	-.0886
AGEFCH							-.0189	-.0987*
AGEFMAR							.0212	.0406*
WAGES							-.1970*	-.0153
PLANMIL								1.1086*

Note: * indicates t-value >2

MOTHERED = years of mother's education; INCOME = family income in tens of thousands of dollars; NUMSIBS = number of siblings; CUNEMR80 = county unemployment rate in 1980; CEMPG01 = county rate of employment growth 1980 to 1981; CPCPI = county per capita personal income in 1980; GRADES = high school GPA; MOMASP = mothers' educational aspirations for youth in years of schooling; IMPHOME = whether youth considers proximity to home important, AGEFCH = age at which youth expects to have first child; AGEFMAR = age at which youth expects to marry for the first time; WAGES = lowest hourly wages youth would be willing to accept after high school in dollars; PLANMIL = whether youth plans to be in the military in the year following high school; MIL = whether youth is in the military two years after high school.

APPENDIX D

ESTIMATION OF STRUCTURAL PARAMETERS AND TOTAL, DIRECT, AND INDIRECT EFFECTS

APPENDIX D

ESTIMATION OF STRUCTURAL PARAMETERS AND TOTAL, DIRECT, AND INDIRECT EFFECTS

In this Appendix, a detailed statement of the model specification and estimation strategy used to secure estimates of the structural parameters is presented. In addition, the procedure used to obtain total, direct, and indirect effects is described.

Model Specification and Estimation

In equation form, the model used here can be stated as,

$$y_1^* = X\Gamma_1 + \gamma_{y2} B_1 + \epsilon_1$$

$$d_{1j} = 1 \text{ if } y_{1j}^* > 0$$

$$d_{1j} = 0 \text{ otherwise}$$

$$y_2 = X\Gamma_2 + d_1 B_2 + y_2 B_3 + \epsilon_2$$

where y_1^* refers to a vector of latent variables such as importance of staying near home, plans to enter the military, and propensity to be in the military after graduating from high school; d_{1j} is the observed counterpart of each of the elements, y_{1j}^* of y_1^*, and it is assumed that d_{1j} will equal 1 if $y_{1j}^* > C$ where C is an unknown threshold assumed to equal zero; y_2 is a vector of observed variables measured on an interval scale; X is a vector of exogenous characteristics (e.g., family income, mother's education, number of siblings); Γ_1 and Γ_2 are conformable matrices of parameters to be estimated that link the exogenous variables to the endogenous variables; B_l (l = 1,...,4) are conformable matrices of parameters to be estimated that link the observed counterparts of the latent variables d_1 to the endogenous variables, respectively; ϵ_1 and ϵ_2 are vectors of random error terms. Crucial to the estimation of the model parameters (structural parameters) are the following assumptions:

1) $\epsilon_{1j} \sim N(0_1 b_{1j})$, $\epsilon_{2j} \sim N(0_1 b_{2j})$; and

2) $E(\epsilon_{1j}, \epsilon_{1j}') = E(\epsilon_{2j}, \epsilon_{2j}') = E(\epsilon_{1j}, \epsilon_{2j}') = 0 \qquad (j \neq j')$

That is, the errors are assumed to be normally distributed with mean 0 and variance b_{1j} (or b_{2j}) and the across equation error covariances equal 0.

To estimate the parameters for the equations included in y_1^*, the method of maximum likelihood is used. More specifically, each equation within y_1^* is treated as a probit model. In so doing, we must impose the assumption that the error variances equal unity. This follows because the metric of the underlying latent variable is unknown and cannot be estimated with the observed data. The likelihood equation for the probit model can be written as,

$$L(\Theta_j; y_{1j}^*) = \pi_1 \Pr(y_{1j}^* > 0)\, \pi_2 \Pr(y_{1j}^* \leq 0)$$

where $_j$ is a vector containing all elements $_{1j}$, $_{1j}$ and $_{2j}$ and the observations are sorted according to those where $y_{1j}^* > 0$ and $y_{1j}^* \leq 0$.

$$\Pr(y_{1j}^* > 0) = \Pr(d_{1j} = 1)$$

$$= \Pr(\epsilon_{1j} > -Z\Theta_j)$$

$$= \int_{-Z_j\Theta_j}^{\infty} \phi(\epsilon_{1j})\, d\epsilon_{1j}$$

and

$$\Pr(y_{1j}^* \leq 0) = \Pr(d_{1j} = 0)$$

$$= 1 - \Pr(d_{1j} = 1)$$

$$= 1 - \int_{-Z_j\Theta_j}^{\infty} \phi(\epsilon_{1j})\, d\epsilon_{1j}$$

where Z_j contains the right hand side variables included in equation j and $\phi(\epsilon_{1j})$ refers to the normal density function with mean 0 and variance 1. Thus,

$$L(\Theta_j; y_1^*) = \pi_1 \int_{-Z_j\Theta_j}^{\infty} \phi(\epsilon_{1j})\, d\epsilon_{1j}\, \pi_2 \left(1 - \int_{-Z_j\Theta_j}^{\infty} \phi(\epsilon_{1j}) d\epsilon_{1j}\right)$$

Using a Newton-Rahpson iterative procedure the likelihood function is maximized. That is, values of the parameters in Θ_j are obtained which maximize the likelihood function.

To estimate the parameters of the equations in y_2, ordinary least squares is applied separately to each question. Ordinary least squares is equivalent to maximum

likelihood under the assumption of normally distributed errors and zero covariances across equation errors (Land, 1973).

Calculation of direct, indirect and total effects draws from the work of Stolzenberg (1979) and Mare and Winship (1983). The *direct effect* is defined as the change in an endogenous variable that occurs as a function of a change in a prior variable in the model, while statistically holding constant all other variables. The *indirect effect* is defined as the change in an endogenous variable as a function of a change in a prior variable that operates indirectly through one or more intervening variables in the model. The *total effect* is defined as the sum of the direct and indirect effects. Mathematically, the effects can be derived from the total differential:

$$dy = \sum_{i=1}^{I} (\partial y/\partial X_i)\, dX_i + \sum_{k=1,\ k\neq k'}^{k} (\partial y/\partial y_k)\ dy_k$$

By dividing through the above expression by the appropriate differential, the required effect parameters can be derived.

For example, if the above expression is divided by dX_1, then the total derivative of y with respect to a change in X_1 is obtained (i.e., d_y/dX_1). The total derivative (effect) can be decomposed into a direct effect of X_1 on y and an indirect effect of X_1 on y.

direct effect of X_1 on y = $\partial y/\partial X_1$

indirect effect of X_1 on y = $\sum_{k=1\ (k\neq k')}^{k} (\ y/\ y_k)\ (d_{yk}/dX_1)$

When computing the effect parameters in the latent variable equations, a transformation is applied and attention is focused on shifts in the probability of an event. For exapmle, suppose we are examining the total, direct, and indirect effects of all prior variables in the model on the probability (proportion) in the military. The following quantities are computed:

$$\Pr(\text{military} = 1) = \Pr(\epsilon > -Z_j\Theta_j)$$

$$= \Phi(Z_j\Theta_j)$$

where $\Phi(.)$ corresponds to the cumulative normal density function.

$$d\Pr(\text{military} = 1) / dX_1 =$$

$$\underbrace{\partial_{1j}\,\partial(Z_j\Theta_j)}_{\text{direct effect}} + \underbrace{\sum_{k=1\ (k\neq k')}^{k} (\beta_{kj}\,\phi(Z_j\Theta_j))\,(d_{yk} / dX_1)}_{\text{indirect effect}}$$

This example shows that the change in the probability of being in the military with respect to a shift in an exogenous variable such as family income is a complex function of the estiamted structural parameters as well as the normal density function evaluated at $Z_j\Theta_j$.

Total, direct, and indirect effects for models such as those specified here can be calculated by modifying existing computer algorithms such as those proposed by Fox (1985). For the present analysis, this procedure has been implemented as a GAUSS procedure using software developed by Decision Resources Corporation.